NEDA Quarterly

North East Digital Association

Devoted to Packet Networking in the North East

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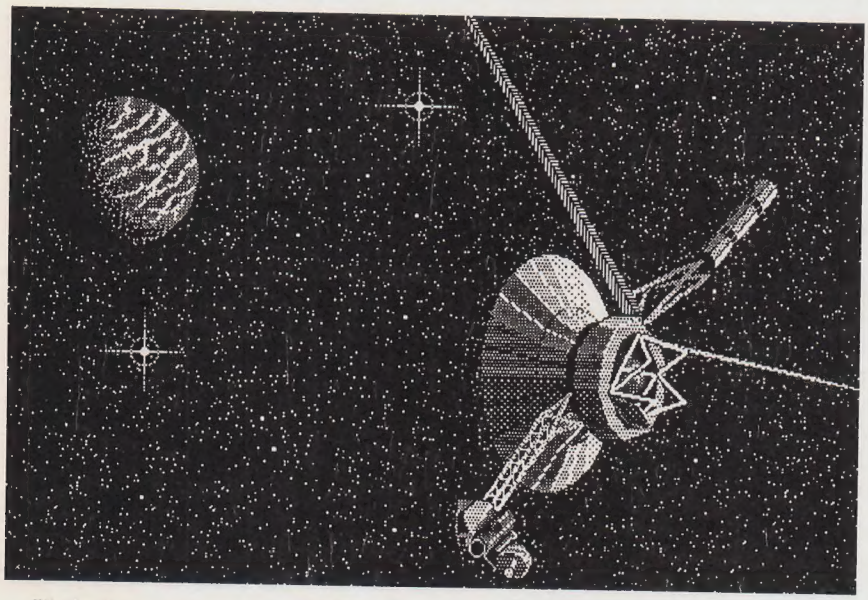
Editors Column



Hello from way out here! Well, not way out *there*, but I am in the Seattle Washington area now. As of late December I've moved to Lynnwood Washington where I'll be working with John Painter, N0NDO, on a new small electronics company. Now NEDA has *two* members in Washington State.

This may be my last Quarterly. Dana, WA2WNI, who served as a NEDA board member from 1989 thru end of 1991, will be taking over the editor's position.

Yes, this Quarterly is a bit late. Business issues and travel got in the way. Sorry about that. I'll be helping Dana get the next one out on time. I hope this didn't incovenience any of you too much.

There has been a decided lack of response from clubs involved with packet in the area best covered by the packet network. There has been more response from outside that area. I must stress how important it is that we all get involved in packet on a local level, as well as through NEDA.

Welcome to the new board members, Bob, WB2QBQ and Cal, WA1WOK. Welcome back Bob, NQ1C! And thanks Jim, K1MEA, for continuing on with the good work. Good luck and have a good year!

Since I've been involved in packet networking and NEDA I've moved from Nashua NH, to Goffstown NH, to Milford NH, to Potsdam NY and now to Lynnwood Washington. It's not over till it's over. I'll be in touch and I'll, no doubt, be back. If packet networking goes as I'd like it to I'll be networked back to you guys soon enough. I'm sure that I'll be contributing articles and assistance to the Quarterly for a long time in the future. 73!

—Tadd Torborg, KA2DEW

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Minutes of 4th Quarter Board of Directors Meeting October 26 1981

The meeting was called to order at 10:25AM by Dana, WA2WNI. Board members or alternates present were:

WA2WNI	for himself
K1MEA	for himself
KA2DEW	for WB2JLR
WA2VAM	for himself.

A quorum of four was available so business could take place.

A roll call of attendees was called:

Dana Jonas	WA2WNI	E	NY
Kevin Wright	WA2VAM	C	NY
Bob Lafleur	NQ1C	W	MA
Tadd Torborg	KA2DEW	N	NY
Bob Seger	WB2QBQ	E	NY
Ike Hathaway	W2IH	C	NY
Roger Ousterhaut	KA2JXI	N	NY
Burt Lang	VE2BMQ	S	PQ
Jim Wzorek	K1MEA	W	MA
Michelle Wright	N2IDK	W	NY
arrived late:			
Cal Stiles	W1JFP	S	NH
Matt Parker	N2MGI	N	NY
Doc	WB2JAB	N	NY

After introductions Tadd left the room to provide talk-in to Cal, W1JFP. Kevin called a quorum count and the meeting was recessed as there were now only three board members or their alternates in the room.

The meeting was reconvened at 10:40AM by W1JFP.

Cal asked if all present were voting members and that all non voting members would take care of that during the next break.

Cal commented that many appreciative words were sent in, about NEDA, by those who replied to the board meeting announcements.

Reports

Secretary's report

The minutes from the last board meeting (in July) were recorded by Dana and transcribed by Tadd. Dana said that this is the same way the minutes for the current meeting would be done. Dana also reported that an error existed in the previous Quarterly in the minutes where on page 31, middle column, 6th line where the word Dayton should read "NEDA".

Dana made a motion that the minutes be approved as amended. Kevin seconded. Passed.

Treasurer's report

Opening Balance	2222.55
Income	
Interest	26.78
Dues and HexiPus™	1378.70
Total Income	1405.48
Expenses	
Mailing misc.	00.00
HexiPus™ expenses	1010.80
Postage	394.16
Printing of Materials	19.70
Refund misc.	1.00
Miscellaneous expenses	0.00
Closing Balance	2,202.37

Cal said that one thing that the treasurer's report doesn't usually is show what commitments have been made. Tadd said that in addition the expenses for Quarterly expenditures is not broken out of total mailing and printing costs.

Kevin moved that the treasurer's report be accepted as presented. Jim seconded. Passed

Cal said that it appears that the total revenue for HexiPus™ sales since the project began is $286 up to October 1st. This is accounted for by the sales of 15 HexiPus™ boards. Herb's numbers verify this. Sales of consignment units amounts to 2 units.

Discussion took place in regards to the purpose and quality of the treasurer's report. Bob, WB2QBQ, said that he was working with WB1DSW, Herb, to help. Tadd said that accounting needs to be broken down into budgets. Tadd said also that because we were a volunteer organization that we could not insist that any volunteer do more than they already are. We can only ask/beg, offer assistance or volunteer to do the job ourselves. We are all very happy with the fact that Herb is working with NEDA to do the job that he *is* doing.

After discussion it was resolved that we want the treasurer to try using Quicken software which was purchased and donated to the club for the purpose.

Cal relates that Herb has generated a new HexiPus™ order form to handle internal communications between the mail, treasurer and HexiPus™ committee.

BBS Committee

Jim reported that MSYS version 1.12 is out and has a new twist in that it has a DxCluster software simulator which will interface with a Pavilion Software DxCluster. Jim said that the YCCC group would not allow connect of the MSYS cluster with their system unless the MSYS nodes are in new geographic areas. YCCC is not using network architecture considerations to determine what nodes are needed, however.

Jim reported that the MBOS node/ K1UGM BBS would be changed to TheNET instead of G8BPQ/KISS. They would convert their node to a HexiPus™ cluster of TheNET TNCs with a wireline link into the PC running G8BPQ. Also point to point links would be used in and out of MBOS. This information was originated by Mike, N1EVH. This site is critical because K1UGM is a well respected 'mover and shaker' in the Boston area and his non-compliance with NEDA guidelines had tremendously slowed development in the Boston metro area.

Jim reported that he recently had a long conversation with a BBS sysop from Florida who was visiting in Jim's home town. The sysop told Jim that the network of ROSE nodes in his area did not perform as well as he'd like and that there is a lot of dissatisfaction with the packet club in the area which does not publish and which has been unsuccessful to date in helping with packet networking. The BBS sysop had reported that in order to get traffic in and out of the area they are working to acquire telephone links to outside the area. They are having problems going from Tampa Florida to Orlando which Jim thinks is about 50 miles. The sysop said that he was forwarding through nine intermediate bulletin boards to make that 50 mile hop as networking is non-existent. Much of the problem in the area seems to be that there are few high sites and the tall buildings are expensive.

Jim reported that W2VY, Tom, who wrote the ROSE software has backed out of the project due to family commitments. ROSE source is now public domain but he didn't know about anybody else was picking it up.

Jim reported that he has .CC files now, recently reworked, that include all of the NEDA members. He manually re-entered the entire membership roster based on the hierarchical addressing submitted on the NEDA membership forms. Jim asked that people be very careful about filling out

Continued on page 17

NEDA Officers and Appointees

Board of Directors:

Jim Wzorek	K1MEA
Kevin Wright	WA2VAM
Dana Jonas	WA2WNI
Cal Stiles	W1JFP
Linds Collins	NR1N
Rich Place	WB2JLR

Appointees:

Chairman:	Cal Stiles	W1JFP
Vice Chair:	Rich Place	WB2JLR
Treasurer:	Herb Salls	WB1DSW
Membership:	Herb Salls	WB1DSW
Maps:	Tadd Torborg	KA2DEW with NR1N, KB2HPU, WA2UMH, WA2WNI, NQ1C
Editor:	Tadd Torborg	KA2DEW
Secretary:	Dana Jonas	WA2WNI

Board Member Alternates:

K1MEA:	Bob Lafleur	NQ1C
WA2VAM:	Don Russ	N2CZL
WA2WNI:	Bob Seger	WB2QBQ
W1JFP:		
NR1N:	Cal Calvito	WA1WOK
WB2JLR:	Tadd Torborg	KA2DEW

Technical Committee:

chairman:	Rich Place	WB2JLR
	Tadd Torborg	KA2DEW
	Chris Piggot	WZ2B
	Howie Cohen	WA2TVE
	Don Russ	N2CZL
	Bob Seger	WB2QBQ
	Cal Stiles	W1JFP

Tech Committee Volunteer Regional Coordinators

South East Ontario	Eric Meth	VE3NUU @ VE3NUU
Montreal Quebec area	Burt Lang	VE2BMQ @ VE2FKB
Northern New York	Steve Long	KB2DAJ @ WB2TUP
Western New York	Frank Werren	N2JYG @ WA0PTV
Rochester NY area	Mark Oliver	NM2J @ WB2PSI
Central New York + Northeast PA	Kevin Wright	WA2VAM @ WA2TVE
Eastern New York	Dana Jonas	WA2WNI @ WA2PVV
Western Mass New Hampshire	Jim Wzorek	K1MEA @ K1MEA
+ Eastern Mass	Linds Collins	NR1N @ WA1WOK
New Jersey	Bill Slack	NX2P @ KA3VGD

BBS Committee:

chairman:	Jim Wzorek	K1MEA
	Herb Salls	WB1DSW

NEDA Emergency Services Advisory Committee

cochair:	Dana Jonas	WA2WNI
cochair:	Cal Calvito	WA1WOK
	Kevin Wright	WA2VAM
	Chan Eddy	KA1OU
	Jack Abel	KB2CS
	Well Farr	WB3CUF

Hexipus Project Committee

chairman:	Howie Cohen	WA2TVE

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Winter Board Meeting February 1 Enfield Connecticut

The next NEDA quarterly Board of Directors Meeting will be held in the Springfield, MA area on February 1st from 10:00am to 4:00pm.

Directions:

The meeting will be held at the Harley Hotel in Enfield, Connecticut. The hotel is located at Connecticut exit 49 off I-91. From east or west, take Mass Pike (I-90) to exit 4 (W.Springfield) and then take I-91 south to Connecticut exit 49.

Lunch will be served in the hotel, menus will be provided at the start of the meeting, and the meals will be prepared and waiting at lunch break time.

Overnight info:

Room reservations are available at the Harley Hotel for $45 a night, please contact Bob NQ1C to obtain this rate.

More info:

For more information, please contact Bob Lafleur. NQ1C. Home phone is (413) 736-0178, work phone is (413) 786-7600 ext.3071. Phone inquiries are preferred over packet inquiries.

Remember, you must be a voting member, or be willing to upgrade to a voting member, to attend a NEDA quarterly Board of Directors Meeting.

—NQ1C
—Host, Winter Board Meeting

Election Results

Total number of ballots sent:	86
Total number of ballots returned:	55
List of all nominees:	WA2VAM K1MEA NQ1C WB2QBQ WA1WOK
New Board members:	K1MEA, NQ1C, WB2QBQ, WA2WOK
List of nominees who abstained but who had a higher vote than the selected board members:	WA2VAM

This year there were four positions open as NR1N re-signed during his two year term which would have expired at the first Board of Directors meeting in 1993.

At the first meeting of 1992 the Board of Directors will decided which of the four new Directors will serve for 1992 only.

The new Board takes office at the first meeting in 1992.

Good luck gentlemen in the new year.

—Tadd, KA2DEW
—NEDA editor

New Node: Boonville NY

In Boonville New York, about 35 miles north west of Utica, there is now a multiport node, linked into UTICA on 220. The Boonville site is at a very nice location to give user access to many towns that are of low population and which used to have none or very poor packet access. The Boonville site also looks north pretty well and will probably talk to one of the Watertown nodes, thus completing a NY State-only packet network into Jefferson and St. Lawrence Counties.

The user port at Boonville is currently on 144.93 but it hears ALBANY node so this may change. The goal for the site is to be a tie in for several other nodes, specifically the LOWVL site, which isn't up yet, and the Utica site. Once LOWVL gets on line the user port at BOONVL may be removed as we are short a two meter rig and TNC to operate both user ports.

The callsign on the node is WA2OFV:BOONVL and it is on 144.93 as mentioned above. Node ops of Eastern and Central NY nodes take note: If we can find paths in and out of BOONVL and if we can come up with the radios this site might make a fine place to implement redundancy. So, while we have a radio and user port at BOONVL you may want to tune a 2m rig to our frequency and see if you can work the node from your node sites.

Once the 440 rigs that I ordered come in we'll have a link from BOONVL to the LOWVL site and then a hop from LOWVL to WATERT. LOWVL may be on in February, Murphy willing.

Thanks to Steve, WA2OFV, who is the node manager for BOONVL and the Lowville site, and Tom, N2GNJ and Don, WA2OEP for technical support and all their time.

—KB2DAJ, Steve Long
—Northern NY Network Coordinator

KC1PJ APLINK Amherst NH

Dave, KB1PJ operates an APLINK station in Amherst, New Hampshire. This is a brief report on it's operation.

APLINK stations serve as automatic message forwarding gateways between AMTOR on HF and packet on VHF/UHF. Dave's node has four radio ports, 3 on the VHF/UHF side and one on the HF side. There is no real time connectivity between HF and VHF/UHF. [Wait for PacTor!!:ed].

Dave's system is available for user connect via the WNDHM2 node. To get to the system connect into the network, connect to WNDHM2 and then connect to BBS1PJ. You will then be connected to a W0RLI BBS. This is a full service BBS whose specialization is Dx news and information. The BBS is available for you as a 'home BBS' if you like. You can also connect to the APLINK system itself by connecting from WNDHM2 to APLINK and then doing a C 4 KB1PJ-2. APLINK:KB1PB-1 is a G8BPQ node which serves as a front end to the BBS. KB2PJ-2 is the APLINK MPO which is tied into the G8BPQ node via port 4. That is why you must do a C 4 to get to it. Here's a fact sheet on Dave's operation.

SYSOP: David KB1PJ
QTH: Amherst, NH 03031
Node: APLINK (KB1PJ-1)
BBS: BBS1PJ (KB1PJ
MBO: KB1PJ-2 via port 4 from APLINK node
FAX: 603-672-0176 (24 hrs)
Tel: 8PM-10PM weekdays 603-672-0175
Purpose: Link to International APLink Network and File server for DX, AMTOR, RTTY, Shortwave

Queries with SASE to APLink, 9 Heather Lane, Amherst, NH 03031 for a GUIDEBOOK on how to use the system.

—EDITOR
with info supplied by KB1PJ

SCIT:NS1N Node and Radio Mods Database Scituate MA

The NS1N MailBox/Node system is located in Scituate, MA and serves the South Shore area of Massachusetts. The user frequency is 144.99. The system is running on a 33Mhz 386 clone with 4 megs memory. Under DESQview multitasking software we run four tasks for the W0RLI MailBox with G8BPQ switch software which allows multi-user connects, one task for server software, and one task for The Garden Spot phone BBS.

Currently 89 local hams call the NS1N MailBox home, and we handle an average of 2500 messages each month. At the present time we are running version 4.01 of G8BPQ's TheNode switch software and version 13.2 of W0RLI's MailBox software. There are 15 file areas on the MailBox including ARRL/AMSAT bulletins, frequency lists, NTS info, Flea Market lists, Packet info, and an extensive radio modifications database. The radio mods database can be accessed through the New England packet network with the use of the reqMOD server that is exclusively run at NS1N.

Now on to the radio end of things. We run TheNet version 2.08B on MFJ-1270B TNCs. The 220 Mhz backbone port going south to KQ1K runs at 2400 baud using an Icom IC-37A connected to a 7 element beam. The 440 Mhz HTF backbone port going north to KC1PK currently runs at 2400 baud (we hope to upgrade to 9600 baud in the near future), using a Kenwood TM-431A into a 6 element beam. The user port, on 144.99 Mhz runs at 1200 baud and uses a Kenwood TM-211A and an RF-Concepts 170 watt amplifier. To connect to the BBS on the user port, you must first connect to SCIT (NS1N-1) and then to BBSN (NS1N).

—NS1N & KC1HO
—node ops of SCIT/BBSN

Nice and Direct

This is the info text on the Watertown NY node.

```
WATERT:WB2QJO-5} }
Watertown NY in Jefferson Cty
144.97 user LAN!
NO DIGIS OR SERVERS ON 144.97 PLEASE!
Set your DIGIPEAT OFF
Talk to KB2DAJ about adding to the network
```

G8BPQ Problem Note

For all versions of G8BPQ you must run the port in half duplex to get it to talk to the active coupler and Hexipus. This is not documented correctly in BPQ until version 4.04.

–K1MEA, Jim Wzorek

Local Packet Meeting Announcements

Please send this information to me as early as possible or as late as necessary. Obviously it would be better for the Quarterly if meetings were planned well in advance or regularly scheduled. The purpose of listing them in the Quarterly is not because all of your people should see it here. I hope that your meetings are well publicized via packet BBSs, DxClusters and at general ham radio club meetings.

RATS, Northern New Jersey

The Radio Amateur Telecommunications Society hosts a general meeting each month on the second Thursday of the month. The meetings are held at 8PM at the Howard Johnson's on Rt 3 in Nutley. Most of the group shows up for dinner at 7PM. Contact N2DSY, Gordon @ N2DSY.NJ or at (201)-387-8896.

MAPRA, VT/NH border

The Mt. Ascutney Packet Radio Association meets every other month. The meetings dates are set at the previous meeting but they are always held on Sunday and usually in Newport, New Hampshire. Contact N1CB @ WA1WOK or at his PMS N1CB-4 from the VNH node for more information.

Other Meetings?

If you don't have a group in your area you might want to start one. If your group is successful enough to overflow your living room then you've obviously done a good thing! Read the 'Local Meetings' article on page 4 for more ideas. Even if your meetings aren't scheduled far enough in advance, or at the time of a Quarterly release I'd like to print contact info on how someone in your area can find out about your meetings.

If you can please send a paragraph about what went on at your meeting, how many attendees, where it was held, what satellites you guys are launching, what kind of donuts you ate etc..

Send info

Send your info to WA2WNI @ WA2PVV. We can accept this info right up to press time.

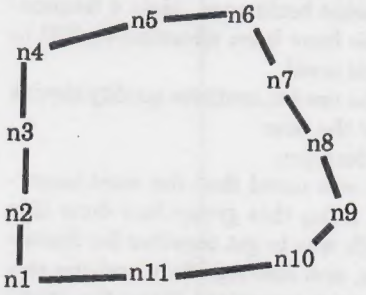
—NEDA Editor

Network Changes, Questions.

In the last issue of the Quarterly on page 5 an announcement was made that there will be changes made to nodes that conform to the NEDA technical committee specifications. Questions were asked of this by a concerned packeteer, in a private message. The message touched on the following points.

• A feature of the TheNET protocol is that it can determine routes automatically from end to end, picking the best route based on 'quality' values. By making it so that only a few node sites away are available from each node, we are defeating that. Aren't we paying a big penalty for shortened nodes lists?

• Another feature of the TheNET protocol is the ability for links to be automatically rerouted if a link fails. This is based on the L4RETRY and L4TIMEOUT parameters. In the NET/ROM handbook it is clearly stated that if there are nodes as such:



and if the route from n11 to n10 broke down traffic from n1 to n9 would quickly shift to going around the top of the loop. Our specified parameters defeat this function. Isn't this a problem?

In this article I'll attempt to clear up why we thought the decisions justified. If you can, please review the article in the last Quarterly as well. Any reader who still has questions or thinks that they have a good point should definitely send it in. Address correspondance to the PO Box or to WA2WNI @ WA2PVV.

The system we are working with is now 20 node sites from end to end, so far. All node sites have a link heading in each direction so the number of TNCs from end to end is 40, so far. Only a few of the node sites are G8BPQ, MSYS or NOS so we can make assumptions based on TheNET nodes although we must further consider the implications of single CPU node sites later. The navigable non-2m/HF linked distance is from London Ontario (80 miles east of Detroit Michigan) to Situate MA. Most links are at 1200 baud with about 200mS keyup delay on the radios.

The time for a message to travel from one end to the other and then get a L4 acknowledge varies between 40 seconds and > six minutes. In order for this system to function correctly the L4TIMEOUT would have to be set in excess of 6 minutes. That means that before a packet retries, to try another potential link it would have to wait 6 minutes. If there was no other potential link it would be another 6 minutes before a failure resulted. This excedes the patients time of both human and automated packet users. The default setting for L4RETRY is > 2. This means that users would wait even longer for a failure message. In addition, if the originating node can't get to the destination node because the system is just too busy, retrying will only *add* to the problem.

For most of the system there IS only one path via backbones. This is a serious problem indeed for redundancy sake. Ignoring the redundancy issue and focusing on the parameter issue what use is L4RETRIES? All we have perceived is that L4RETRIES increases the number of packets across the system. Thus when the system gets slower than L4TIMEOUT the number of in-the-system packets goes UP, rather than down.

In experiments working with the network in places where there are actual backup paths the system has not taken a lower quality route except where the breakdown was adjacent to a location where an alternate route was available. That is if the network consisted of nodes A - B - C - D where an alternate route existed from A to D and a message was originated from A and where a breakdown occured between B and C the message never made it to D until node A forgot about the primary route to D through B. This would take hours, not minutes. Because we have several TNCs per site and the best links were dedicated point to point links the failures would never be recovered from.using the scheme outlined in the NET/ROM handbook.

Continued on page 9

Packet Meeting Reports

NH Area Packet Meeting November 13, 1991

By: Cal Stiles, W1JFP, with excerpts from the minutes by Jack, WA1ALM, and packet notes by Ed, K1TR.

On Wednesday November 13, 1991 a packet meeting was held at the New Hampshire Office of Emergency Management. This meeting was attended by Node Owners and sysops from New Hampshire and adjacent areas.

The purpose of the meeting was to discuss packet networking and to share concerns and goals for the advancement of packet in the area.

Attending the meeting were:
Jack Sheehy (WA1ALM),
Steve Johnson (KC1HO),
Cal Stiles (W1JFP),
Russ McAllister (WA1TLN),
Dexter Howe (KY1M),
Karl Johnson (NS1N),
Joel Huntley (WA1ZYX),
Arnie Johnson (N1BAC),
Ed Parsons (K1TR),
George Hitz (W1DA),
Ron Baker (WB4HFN),
Rich Morgan (N1DCT),
Glen Belinsky (KA1MLH),
Chan Eddy (KA1OU),
David Speltz (KB1PJ),
Cal Calvito (WA1WOK),
Richard Critz (KB4N),
Dick St Jean (N1FIL),
Al Shuman (N1FIK),
Ray Crites (K1WW),
Don Dillaby (KA1GOZ),
Lindsay Collins (NR1N).

Lindsay Collins (NR1N) organized the meeting, and acted as the informal MC. Lindsay made it clear that he was not interested in creating a permanent position for himself, but was willing to coordinate the discussions. He proceeded to do so in his usual very capable fashion, thanks Linds.

Numerous items were covered at this meeting in an informal discussion atmosphere, including but not limited to:

- People needs
- Backbone linking
- Emergency Power at critical sites
- Redundancy needed for backbone links
- Speeding up critical links
- About speeding up backbone links with lower TXD, true DCD, higher baud rates, etc.
- Servers, and how they interact with the network
- Packet cluster and it's effect on the network
- Additional sites
- Frequency Co-ordination and packet backbones. Only 4 frequencies have been allocated on 220 in this area!
- The need to continue quality service for the user.
- Education

It was noted that the most important thing this group had done this month was to get together for discussions, and sharing ideas and the second most important thing the group could do was to set a date to meet again.

The date chosen for the next meeting is January 21. The next meeting will also be held at the New Hampshire Office of Emergency Management and will commence at 7:30 with Pizza at 6:00.

The feeling at this meeting seemed to be universal that several major items should be high on the list of priorities to be addressed at future meetings.

1. Redundancy for all backbones with urgency toward heavily used paths.
2. Greater throughput for existing heavily used paths.
3. To migrate the network towards a cellular topology in accordance with the current NEDA philosophy.
4. Build in emergency power at strategic sites.

It was felt that the numerous items touched upon at this meeting should be given more consideration, discussed further, and expanded upon at future meetings. Also some of the ideas set forth concerning backup routes and network enhancements, would in all probability start taking shape at once.

It was agreed to postpone choosing a name for the organization until a future meeting.

Feedback received after the meeting has indicated that this kickoff was a huge success and that we can look forward to greater things to come.

—Cal Stiles, W1JFP

Quebec City meeting Nov 23 1991

Burt, VE2BMQ

There was a discussion regarding the setting up of a NEDA-Like association in Quebec to promote packet radio especially on the Francophone side. It die not immediately go largely because of the resistance from one or two individuals who thought that it was better to leave it to a committee of the provincial amateur association (called RAQI) and other political reasons but we may se something there in the next 6 months. To this end also, Dan VE2FNK asked if the NEDA Quarterly was available on disks. He has access to English/French translation service programs on an IBM mainframe (presumably as he works for IBM) and would like to try it for at least some of the content of the Quarterly, which would then be distributed in Quebec.

A Hidden Transmitter Syndrome Free network is growing around Quebec City with four node sites now and more planned, largely as a result of my information campaign (I would like to think at least). They have become strong advocates of a general (as opposed to just BBS forwarding) HTSF network concept and are spreading the gospel in that area. My [3' x 4'] map is updated now as to what they have currently installed. They are actively promoting the idea of a digital highway from Riviere du Loup (NE of Quebec City) to Montreal where it would connect to the network that we are working on.

They have been installing 2400bps links using MFJ modems with much success. The recent article [by NX2P] on putting MFJ2400 modems into a Tiny 2 probably got NEDA a new member. At least I think it convinced him when I showed him the page in the Summer Quarterly.

The BBSs in Quebec have largely switched over to the latest FBB5.13 BBS software [made in France I think:ed] with one of *our* local sysops (Gilles VE3HR) handling North American distribution and liaison.

We also discussed frequency usage for links. Quebec City has started to adopt my split frequency UHF plan so as to run more links from 1 site They have 3 and soon to go to 4 links from Mt. Belair just north west of Quebec

Continued on next page →

NNY Meeting Clarkson College Potsdam NY 10/19/91

PLEASE NOTE: These are subjective memories of what I understand as having occurred, and as you know there are as many views of such things as there are people in the room often times. Also, I did leave for a few minutes, and when I returned the focus of the meeting had changed and people were all in smaller groups discussing many different things that I could of course not keep up with. So this is my perception of the first hour and a half of the meeting...

KA2DEW (Tadd) got the meeting started by describing the progress that they have accomplished in the Potsdam area over the last year. They have installed 10 radios, and 10 TNC's to put together 4 nodes in a backbone network, with CANTON in the middle, connecting OGDENB, POTSDAM, and WATERT .

Tadd pointed out that their hope is to connect from WATERT to CANDGA, to tie into the Boston—>Buffalo backbone, but that WB2JLR (Rich) at CANDGA reports that his station cannot hear WATERT. Apparently one end is at 1400 ft., the other is at 500 ft., but because of the distance, and the curvature of the earth, the lake between them is keeping it from being a good path. They are pursuing other alternatives, i.e. toward SYRCUS or other sites that would have a better path.

Tadd then suggested that we go around the room describing what each group is up to, what projects are they engaged in, what are their needs, etc. The following notes are sketchy attempts to record what I saw as key or interesting stuff, and not really complete at all.

VE2BMQ (Burt) site manager for VE2RM site, described the Rigaud repeater on 440 and the manner in which it ties together servers in the Montreal area.

N2IJW (Pete) EC, and St Lawrence Asst. Radio Officer

WB2JAB (Doc) packet operator in Winthrop area, interested in contributing site if it is of interest...

VE3IWJ (Nand) Brockville HF/VHF

KA2JXI (Roger) operates the OGDENB node, also KA2JXI BBS, set up the WATERT node 3 weeks ago and it is working. Put a 6 meter beam (51.95 @ 100 watts), 3 elements, pointed toward CANDGA, but they need another step in between. Rich is looking for people in the Oswego or Syracuse area who may have a good location...

KA2CMQ (Jim) from Russell, ...

K2LMG (Dave) faculty advisor to the Clarkson Club...

N2MQF,N2MQI (?) interested in packet

VE3IFB (Dave) From Ottawa, working on 156 k bit network

VE3MDL (Marcus) Ottawa ARC

VE3PFH (Ian) sysop for OTTSAT, works at Telsat...

VE3JF (Barry) leader of the packet working group from the Ottawa ARC, sysop for several nodes, described full duplex 56 k bit repeater in Ottawa, developed into backbone system, looking down the road to new services like on-line call servers, Internet type services,...

Barry expressed the view that we are already seeing BBS' dedicated/ specialized in particular ways, and that we are probably looking at this sort of specialization of services down the road, i.e. one BBS being primarily AMSAT, another having a call server, etc.. and all being connected on high speed backbone (s), so no need to duplicate services.

Barry was asked what the max distance was that 56 k bits could reliably handle, and he said that there was one place where it was 100 miles, but that it is essentially line of sight. This packet switch is developed by the "Grapes" people in Georgia. It needs 12 dB more margin over 1200 baud to be reliable. (Burt says 5 microvolt receive is minimum for good quality links).

The "packet 10" was next discussed. $7-800., 5 ports, a bit larger that a regular TNC.

There was a lengthy discussion of the Hydra network in Ottawa, and their concern for high speed, and providing services as the way to attract users. This approach was contrasted with a concern to get areas connected first, and then to later upgrade to higher speed.

There was another lengthy and technical discussion of the Packet 10, and the PI card that ties a high speed modem to a PC.

VE3OCW (Doug) chair of the Ottawa ARC packet group, responsible for securing funds, wants to find links to the states.....

WB2RYB (Brian) Malone

VE3KMV (Dave) Ottawa

VE3SGG (Eric)

N2MXQ (Joan) new ham

I described as best I could the 4800 baud link that we (DOERS) are putting up on Rand Hill, in coordination with UMX to the south and BMQ to the north, etc...

Burt started a long discussion of the proposed link (Moose Creek) between Rigaud and Ottawa. I believe that the Ottawa folks seemed to have the equipment if the Montreal folks can only come up with the site...

The meeting then dispersed into several conversations...

I feel that there were two major outcomes from the meeting. First and foremost we all got to meet each other and hear an update on what each group is doing. Second, it appears that together the group (s) may solve the connection between Ottawa and Montreal, as well as the one between Ogdensburg and the Syracuse area. We also discussed a potential connection between Rand Hill and Malone area...

—Darrel, N2IXL @ KD2AJ.NY
—D.O.E.R.S.

[for more info on the Ottawa projects send to Packet Working Group - Ottawa Amateur Radio Club PO Box 8893, Ottawa Ontario K1G 3J2. The club and it's members have published papers on the subject and can fill you in on more detail - editor]

Quebec from previous column

City. [See Split Frequency UHF elsewhere in this issue:ed] I pointed out the need for coordination to avoid conflict with voice users on 446MHz region simplex so the idea will be to avoid the 100KHz channels and stay on the secondary and tertiary channels. It was also decided to do our own frequency coordinating as we knew far better the packet frequency requirements locally and to use the official coordinator as a database only. He apparently agreed to this idea.

That's about all for now that I can remember, or maybe I should say that I could *understand* since the meeting was largely in French and my oral comprehension is less than ideal, i.e. I probably missed much of the subtleties.

—Burt Lang, VE2BMQ
—Voluntary NRC, Montreal region

Kantronics D4-10 UHF Radio

These are some notes based on our experiences (over the last 10 days) of making the new Kantronics D4-10 radios work at 19.2 KB. Our group is using these radios to build a metropolitan area network that includes a full duplex UHF digital repeater, a G8BPQ switch, and high-speed links to other areas.

The Hardware

The Kantronics D4-10 radio (not to be confused with the 2M DVR2-2) is a UHF radio designed for data transmission. Kantronics has optimized the D4 to move data at 19.2 kilobaud within a 100KHz channel with a 60KHz receiver bandwidth. It's crystal controlled on two channels nominally in the 430 MHz range and is rated at 10W output, although my Bird says more like 15. It has a <much> better receiver than the 2M DataRadio.

The interesting feature of the radio is that it has a TTL level I/O port designed for direct FSK. TXD will modulate +/- 10KHz around the center frequency, and RXD is derived from a data slicer. The squelch circuit is very fast (~2ms) and is available as DCD on the connector. And not to worry — the TXD line is shaped, so the FSK isn't based on square waves. The bandwidth is within FCC limits (100KHz) for the 70cm band.

Our Approach

Since the radio is designed with digital levels in mind, my first testing with two of the beta models last March focussed on the simple approach — using an 8530 SCC chip to generate HDLC frames and shoving those frames directly into the D4 TTL port. To my surprise, it worked!

Since then, we've decided to base our network, at least for now, on that approach. If and when modems arrive that can do a better job, we'll probably use them, but for now the savings of $100 per radio by not buying 19.2K modems outweighs the relatively small advantages the modems offer (mainly in more reliable DCD, but even that's open to question).

Using the Ottawa PI Card

Our first experiments used the Ottawa packet group's PI card (a DMA driven, 8530 plug-in card for the PC bus). Interfacing them to the D4 is a snap — just wire up a five conductor cable between the two, set up NOS, and you're in business.

Interfacing the Data Engine

However, the PI card only works in PCs, and (at present) only works with the KA9Q NOS software. We wanted to have an alternative packet generator available, so we focused on interfacing the DataEngine to the D4, sans modem. That also proved easy to do.

Kantronics makes a small jumper board (for about $25) that's designed to allow the DataEngine to work with an external modem. Just get one of those, jumper it as a type "A" modem, and add a CMOS chip to divide the RXClock signal by 32 to feed back as TXClock.

More specifically, we used a CD4020 with the clock connected to pin 5 of the internal modem header and the divided output connected to pin 6. 12 volts is available on the jumper board; we used a 1K resistor and 5.1 volt zener diode to power the 4020 chip with the necessary TTL level. The chip can be mounted "dead bug" style on the jumper board; the whole thing makes a very nice package.

Software Speed Selection

With either of these approaches, the actual data rate on the radio link is totally software-driven. It's just a matter of what speed you program the baud rate generators to. We've moved packets at every supported rate from 110 baud to 28.8kb (28.8 doesn't work very well, but it does work), simply by using the appropriate "attach" command with NOS, or "modem" command with the DataEngine.

Results

First, these radios are as fast as Kantronics says they are. The PI card driver allows TXDelay to be set in 1ms increments, and we've found that a TXD of 4ms works. We're using 5ms to provide a bit of margin. Remember, this is <milliseconds>, not the (milliseconds times ten) that most TXD values represent.

Our initial testing shows that very respectable throughputs are easy to achieve, at least across the room. Using NOS on 286 or better machines, and a RAM disk to avoid mechanical slowdowns, we've consistently seen FTP file transfers of binary files go at 1600 or more characters per second between two PI cards. Note, though that this is on a totally clear channel, with all parameters set wide open. In the real world, neighborliness will require backing things off a bit.

We do see some packets that don't get acknowledged; the resultant retries and backoff can slow things down a bit. We're investigating the problem, but at the moment don't have any clues.

We only began testing the combination of a PI card station talking to a DataEngine station last night. The throughput there has been more like 650-700 characters per second. We're not sure why this great a difference exists. Possibly the problem is that the DataEngine-to-host link on the serial port is running at the same speed as the radio link, that the computer just can't keep up with 19.2 serial data (we're not using 16550s, so even the machine is a 386, this is quite possible), or that the asy code in NOS is be less efficient than the PI driver. We're going to continue looking at this.

Digital Repeater

We're turning two of the D4s into a digital repeater. Our input frequency is in the 420 MHz range, with output on 430 (a 10MHz split). The interface is actually very easy but it took a <lot> of trial and error to get things working.

The problem in a nutshell is that although the digital port is advertised as "TTL", it really isn't. The PTT line is fairly standard — to key the radio, bring the line to ground and sink about 5ma.

However, the DCD, TXD, and RXD lines are all tied to op amp stages set up as comparators. Although they are biased to switch with TTL levels, we found that using 13.8 volts is much more reliable.

Also, it's not obvious from the documentation but the FSK keying circuit actually has <three> states, not two. Grounding TXD shifts 10KHz down, pulling it high shifts 10KHz up, and something between will put out the nominal frequency. This cost us a lot of time — our first interface <seemed> to be modulating the radio, and we could hear the data on the receiver's speaker, but there was no RXD. It turned out we were shifting between -10 and center — enough deviation to make noise, but not enough to trigger the data slicer.

Kantronics continued from previous column

Anyway, the answer was simple once we figured it out. We used a CD4049 hex inverter chip. Two cascaded sections provide PTT from the DCD input. Two more sections interface RXD to TXD. The chip is powered from the same 13.8 volt supply as the radios.

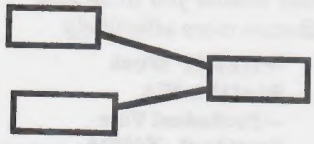
The critical thing it took a while to figure out is that RXD <must> be tied high at the input to the inverter. Not doing this is what caused our indeterminate keying state. 22K between Vcc and RXD worked fine for us. DCD would probably also benefit from a pull-up resistor, but seems to work OK without one.

Of course, you'll need extra circuitry for control and time-out timers. We're also looking at ways to come up with a more reliable keying scheme; if the repeater is brought up by a rogue carrier, that will shut the whole network down. A circuit that detects a packet's opening flags and trips a short timer (maybe 1 second) AND'ed with the squelch-derived DCD is probably the simplest answer.

The repeater turn-around is pretty quick. We've been able to reliably send packets through it with a TXDelay of 10ms. Obviously, a hang-timer won't work in a system based on carrier-derived squelch, so the repeater output is indistinguishable from any other packet station.

Repeater identification will be handled by the G8BPQ node that will be interfaced with the repeater.

—John Ackermann, AG9V, and the Miami Valley FM Association, Dayton, Ohio". Republication and distribution is no problem so long as credit is given.



Network Changes from page 5

The number of visible nodes (2m ports) connected via dedicated point to point backbones in the system is of the order of 200. If we open that up to include all visible ports, even those from links on 2m, we certainly excede 500. Because TheNET lists the oldest 100 nodes it sees, it can leave out nodes which are closer or better but only discovered after the table was full. Nodes that are one hop away, but new, would therefore never show. There are a few things we can do about this. We can reduce the node propagation factors, as we've proposed, or we can add a human factor to determine what nodes pass throughout the network and what nodes don't. We tried this one. All of the humans resigned.

Users cannot connect from end to end in all of the system. TheNET will not allow them to based on the above points. Given that some sort of navigation must be done and that the system must be broken up into chunks of fewer than a hundered user ports we have to come up with a way to do this.

It is important that the L4TIMEOUT be setable to less than a few minutes. It is important that L4TIMEOUT doesn't get exceded unless a link fails. Thus the number of hops should be pretty small. In our experience 18 hops is too many. 18 hops allows a connect from Rochester NY to Scituate Mass. That rarely works. A number needed to be considered. Seven hops was selected because that is the highest number at which the Destination List Length at the STMFRD node (worst case) is still less than 100 visible nodes.

The comment about destroying one of the best features of NET/ROM may well be true. Unfortunately in using it as a multiport system with greater than two links per site I think we are already corrupting that system. We are designing multi-frequency switches, not true high-level nodes. The point was well made though.

Another major bug with TheNET is that if cooperation exists between two inconsiderate nodes in the network the sysops could arrange that their two nodes hog backbone time. This may be done by running high WINDOWSIZE, low L4TIMEOUT and high L4RETRIES. This effect becomes more obvious with the number of hops between the two stations. Thus reducing the number of hops that nodes propagate reduces the damage that any miscreants could do.

The two most major downfalls of the new parameter implementation, that our committee could come up with, are

1. The esthetic value of a full looking nodes list is lost
2. Long distance nodes are no longer visible and thus user knowledge of the network (i.e. maps) is more helpful.

The point of concern for the colaborators on this article is that perhaps one or more *bad* conclusion are being excepted as FACT by active members of the NEDA Technical Committee. One such bad conclusion might be that the Quality value we have been using is currently the SAME on all ports for backbones. It currently is at 230. This allows for 18 node hops before the quality reaches 50 which is our minimum to broadcast. This has been published in the NEDA membership package, allong with a written justification of these numbers as proposed by KC3BQ in Rochester in 1989. The current decision to reduce those values to 203 is really just an extention of Rob (KC3BQ)'s work.

Hopefully this will clear up some of the questions people have, without scaring away any good ideas. If you have a question, send it in or at least talk it up. NEDA now has 309 members. I'm sure they'd all like to see every good question in print.

—NEDA editor

NX2P Electronics, which is the one man company owned by NEDA member Bill Slack, sells packet radio gear. Bill can now sell the PacComm UHF packet link radios (as well as the complete line of PacComm TNCs). The prices he has listed are:

TEKK KS-900, 9600BPS read data radio w/XTALS and case with factory tune-up in the 430 to 450MHz band)	**$179.95**
TEKK KS-900, 9600BPS-ready data radio w/o Xtals and case	**$159.95**
Bill also has his own Radio Multiplier II (RM-2) w/o case, which allows up to 4 TNCs to communicate via audio with each other and share a single radio.	**$89.90**

Case for Radio Multiplier II is $29.95 and the bare board is $19.95.

Bill also has radio to TNC cables.

Give NX2P electronics a call from 9AM to 9PM EST at 201-729-NX2P (6927).

Problems and some fixes for TheNET

I think that there are three things wrong with the node networking software systems.

Problem No. 1 is that when you send data into one of these nodes, the node will not return an acknowledgment to the originating station of the packet until the information has been sent to the next node. Let's take a case where the node is relaying the information to another node or user. To visualize this, say that you have your local uplink LAN port into the network. When the data is received by your local LAN, that node first sends to the next node in the path to get to its destination, waits for an acknowledgment from that next node and *then* sends you back your acknowledgment.

Problem No. 2 is that when you connect to a distant node and ask for a nodes listing, the entire listing must be received by each node in the connected path before it will be relayed to the next connected node, or end user. To visualize this, lets say that you connect to your local LAN node, and then connect to another node in the network that is out of your local area and that there are a dozen other network nodes in the path. When you type "N" (for example) the information will start making its way across the network to the node at which you made your entry into the network, but you do not receive any information from your local node until the entire listing has been received at your local network node. This means that if the path was working and it failed for some reason, you will not even get a partial listing.

Problem No. 3 is when you connect to your local uplink node and you wish to connect to another node in another state (for example) and you issue a "C xxx" your packets are essentially digipeating from the node at which you uplinked the destination node. But, how can this be? We have been told that to avoid this is why the nodes were developed in the first place, right? Right. The problem comes from the way that NET/ROM, TheNET, and TheNET-Plus handles the level 3 and 4 connections. On a level 3 connect between nodes you *do* get node-to-node-acknowledgments, but on level 4 layer connections you're essentially digipeating across the network and backbone networks to your destination. This is one of the reasons why node hopping across the country will often be so difficult. If there is local activity that is keeping the network busy in part of your path and your packets are trying to traverse that part of the network, it will be competing with the most aggressive timing parameters on the local connections. Another factor that plays here is the timing parameters. Nodes operate the same way your TNC operates, with parameters like FRACK, PPersistance, DWait, and RETRY, and if your Packets are 'digipeating' across the network in a level 4 connection these parameters might well time out your link connections before the data has even had a chance to be relayed back to your last node connection. This also is true for those BBS stations that advertise "xxxBBS". If you should connect to your local node and see a "xxxBBS" in the nodes listing (by typing "N") and see a BBS that you'd like to connect to but it is another state or even another part of your network, there might be a dozen or more network nodes in the path to get to that station and you're essentially digipeating the entire route. It would probably be best if the "xxxBBS" nodes were to be limited in the network to the area of intended coverage anyway and not propagating throughout the network and across the states, but that is another story.

Best bet here is to 'stage' your connections. A knowledge of the network map is useful. You can also figure out the network your self by stepping through it if things are set up that way. For instance. First connect to the local LAN node, then type "N xxx" where 'xxx' is the destination node. The node will then reply with any information that is available to get to the destination node, such as; (see side bar!)

In this example I only ventured but a short distance, which never left my house, but this very same method has been used for years to travel across the country from one state to another several thousands of miles away! While I was living in San Jose, California I used to be able to connect with nodes in South Dakota! Now that I'm again living back in Washington state I still get connections from N7OO using various VHF and HF links from Sierra Vista, Arizona.! You'll find that there are places where you can skip several nodes in your connect path over a period of time, and that there are others that you must connect to get past a place that has poor propagation conditions or heavy loading from BBS or user activity, but that your over-all ability to get from one place in the network to the other will be vastly improved.

Disclaimer: NET/ROM or its equivalents are what we've got to work with, there may be other networking software packages out there that operate in a different way, but that doesn't mean that this software is inferior. However, knowing the limitations will better enable you to be able to use the software more effectively.

—N7FSP West Seattle, WA
—Technical Vice-President, NAPRA (Northwest Amateur Packet Radio Association) + VHF/UHF Hub BBS sysop for Western WA

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C N7FSP-14                                      - entered to connect to uplink node
Connected to N7FSP-14                           - Connected!
N ALKI                                          - entered to the local uplink node
*ALKI:N7FSP-14} Routes to: ALKI:N7FSP-1         - this is a reply from the node
> 190 6 0 WSEA                                  - second line of reply from node
C WSEA                                          - next node in path to destination
*ALKI:N7FSP-14} Connected to WSEA:N7FSP-5       - Connected!
N ALKI                                          - entered to the local uplink node
WSEA:N7FSP-5} Routes to: ALKI:N7FSP-1           - this is a reply from the node
  255 5 1 ALKI                                  - highest quality to destination node
  254 5 1 *ALKI2                                - possible back-up route
  254 5 1 *ALKI3                                - possible back-up route
C ALKI                                          - connect to highest quality path
WSEA:N7FSP-5} Connected to ALKI:N7FSP-1         - Connected!
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LAN Architecture or Should I use a Beam or an Omni?

There has been controversy since the early days of amateur packet radio as to whether a packeteer should use an omni or a beam. I'll try to resolve that in this article. I think that I can show that in modern metropolitan packet radio a user station should utilize a beam if possible.

Most packet radio operations in the U.S. occur on 2 meters. In most situations when a packet user turns on the radio and TNC the station will hear other sites. Some of those other sites will hear yet other sites and so on. In most cases there will be more than one server, node, digipeater etc. on the frequency. This is far from ideal. In this case planning either has not taken place or has not been effective. For the purposes of this article I'm going to focus on LAN channels where planning has taken place and where we're now trying to make it effective.

Fixed # of stations, all stations hear each other

There are two LAN architectures available to users of current day off the shelf TNCs. The first is the same architecture used in commercial CSMA ethernet systems. In this all stations can hear each other. All are basically omni. All have equal priority and may make a local decision on when to transmit and be pretty sure of not colliding with another station.

This kind of LAN is possible on Amateur Radio only where spectrum space is not a premium and all of the packeteers are in a planned region. This may be the case in a small community, not a major metropolitan area.

One server, stations don't all hear each other

The second architecture is one in which it is not possible to predict how many active stations can hear each other. Using standard TNCs the only form that this LAN can take and still function with better than 20% efficiency is the form in which

- one station on the LAN can hear and talk to all of the other stations
- that one station is the only server on the channel.

These two points are usually the case on *designed* LANs because all of the users access one node or one server on a given frequency.

> *It can be proven experimentally or via simulation that the only way to efficiently use a CSMA system with hidden transmitters requires that the total utilized channel time must be less than 20% of the available time. If the server is not a hidden transmitter to anybody then it may use as much time as it wants. Only the user stations need divide the remaining time by 5.*

In this scenario a beam should be used for all user stations if possible because

- it won't affect the channel utilization calculations at all whether the user stations can hear each other or not, so long as the user stations don't transmit very much
- and the geographic coverage of the LAN may only be controlled if the individual user stations cooperate by using beams.

The two drawings show geographic area used by a LAN where the users have beam antennas and by a LAN where the users have omnidirectional antennas.

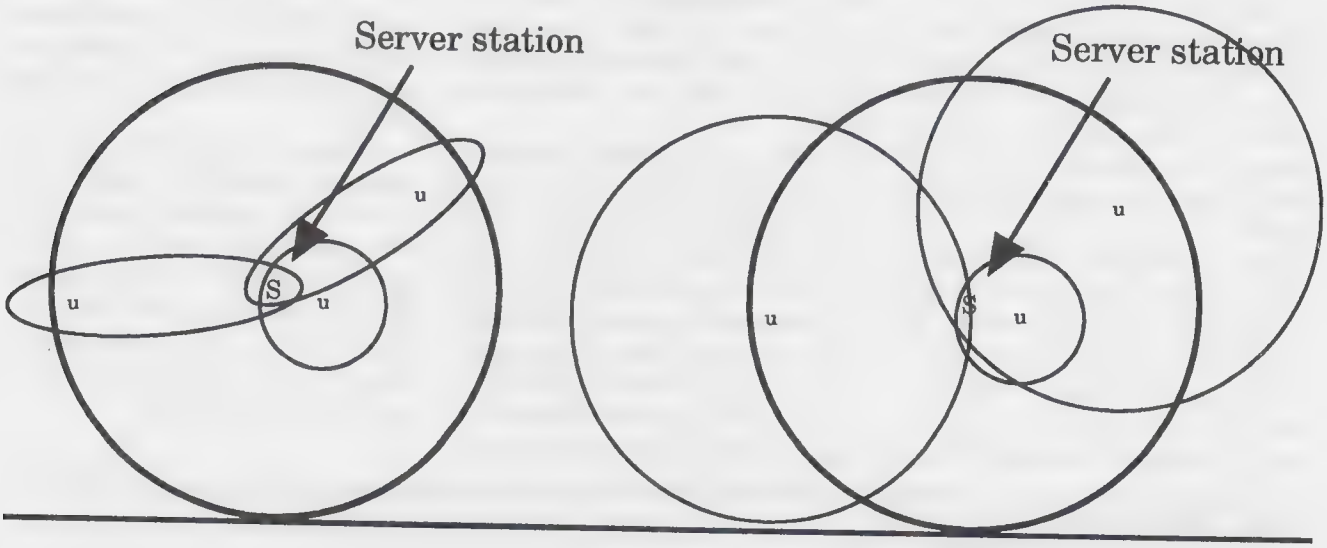
It can be seen from the drawings that if a *large* group of people operated to a server station, using omnis, that the size of the LAN would be around twice as wide as the LAN where user stations are operating with beams. This would lead to one quarter then number of possible LANs on each 2m frequency in the metro area.

Since the most efficient (highest data bandwidth) utilization of a frequency, with a given baud rate, is with a single-server type of LAN, the amount of data bandwidth available on a frequency would go up by a factor of 4 if all user stations used beams. (Area of a circle is πr^2)

Since most 2 meter LANs are not planned there is an immeasurable improvement to be gained by running cellular LANs, with users having beams.

Your next phase, after you prove out the cellular concept is to start reducing the size of your LANs. By reducing the max number of stations on a LAN you increase the performance you give each station. Baud rate is secondary. Obviously having a digipeater on the highest building in the city is right out (hi).

—Tadd, KA2DEW



MAPRA Digitell

The magazine of the Mount Ascutney Packet Radio Association. Material by the members of MAPRA.

Mount Ascutney (VNH node) is in the vicinity of the New Hampshire and Vermont border about 45 miles east of Rutland and 80 miles west of Concord NH. Meetings are held on Sundays about every other month in Newport NH. Contact N1CB @ WA1WOK or on his PMS N1CB-4 from the VNH node.

MAPRA TCP/IP Demo

by Steven Baumrucker, MD WD4MKQ @ W1FYR.NH

11/18/91

TCP/IP is a great packet mode for "hackers," according to Cal Stiles, W1JFP, "and it is a lot of fun to work with." Cal and fellow packeteer Bunny Pratt, W1RFP, demonstrated TCP/IP for the membership of the Mount Ascutney Packet Radio Association (MAPRA) during the regular membership meeting on November 17th, 1991.

TCP/IP stands for Transmission Control Protocol/Internet Protocol and is a "suite" or collection of protocols that is in use internationally for data transfer, especially in industry. Phil Carn, KA9Q, translated the system for use by amateurs in packet radio. One of the central benefits of TCP/IP is its inherent ability to transfer large files between computers.

"Packet radio under NET/ROM really doesn't support file transfer functions very well," stated Bunny, "If you've ever wanted to send someone a working program file, TCP/IP is the system to use." Their demo illustrated some of the power, and also some of the difficulty in using this system.

After a brief discussion by Cal of the message format used by TCP/IP, the demonstration began. First shown was a command called "PING" which is analogous to sonar. A PING packet transmitted to another station will "bounce back," revealing if the other station is on the air, and calculating the round-trip time for a packet.

A real advantage of TCP/IP over standard packeting was demonstrated when Cal switched off his radio during a file transfer. The two stations continued to transmit, but as time went on, the transmissions slowed until the rig was re-engaged. Then the two stations reestablished contact and finished the file transfer. Using normal AX.25 stations, this would have resulted in the stations "retrying out" and disconnecting, losing all of the data transferred.

Next was the "FINGER" command that returns a file of station information (or anything else!) from the "FINGERED" computer. Cal typed "FINGER BUNNY" and the system automatically opened a "session" with the proper station, got the file and returned it to Cal's screen before shutting down. This command may be embarrassing to type, but it is powerful!

A TELNET session was next, which initiates a keyboard to keyboard QSO. This was familiar to most packeteers who have enjoyed ragchewing on the network.

One of the most astounding features was FTP, or File Transfer Protocol. Many in attendance were incredulous when Cal connected to Bunny, changed directories on Bunny's machine, then copied a file and sent a file, all using familiar DOS-like commands. This in itself would have been only mildly interesting; the fun part was that Cal was using an IBM PC, and Bunny a Macintosh. Two hams using compatible computers could trade pictures, programs, or any other files in addition to text files.

SMTP, or Simple Mail Transfer Protocol showed that stations slated to receive or relay mail need not be currently on-line for mail to be active; once the next station in line comes up on frequency, the mail will automatically proceed. Addressing is a 32 bit system, which each computer having its own 32 bit number (this "only" allows 4.3 Billion individual addresses!) A mature network would allow mail transfer from computer to computer with a minimum of human intervention.

"A downside of TCP/IP is for mobile hackers," reported Cal. Routing is predetermined so responses to packets generated while mobile would be sent to the home QTH rather than to the mobile station. Also a problem is that the "overhead," or amount of data required to send a single packet of text, is enormous and may make TCP/IP impractical for anything but large file transfers, at least at current network baud rates.

"TCP/IP requires a rather powerful computer," stated Bunny, "unlike the current system which can run with a TNC and a dumb terminal." The system's less-than-ideal compatibility with NET/ROM due to the different timing philosophies (slow-down vs retry/disconnect) was also discussed.

Many at the meeting were dazzled by the varied uses and power of TCP/IP. Those with an interest in more information can contact Cal W1JFP @ W1FYR.NH, Bunny W1RFP @ W1FYR.NH, or NQ1C @W1NY.MA, and WZ2B @ WB2WXQ.NY who are involved in experiments regarding gateways and TCP/IP data running under TheNET.

>>Steve is a family practitioner in rural Vermont and was first licensed as a ham in 1972. He is interested in amateur satellites, packet DXing, and weather fax reception. An amateur telescope maker, he also holds a degree in Radio, Television, Motion Pictures, with a minor in Journalism. He can frequently be found on one of the CROWD nodes.

Node Test Harness
by Cal Stiles, W1JFP

How many of you node SYSOPS have been frustrated by not being able to see what's going on at a particular radio link when you have hiked some distance to trouble shoot a node complex? Do you carry a receiver with you so you can monitor each frequency at the node site? If you do how do you get on an antenna that will allow you to hear the other end of the radio link?

Here's how I solved the dilemma. It seemed appropriate to connect into the existing radios at the site without disturbing the existing setup at the node.

I fabricated a cable harness that would connect in series with the existing TNC to Radio cable at the node. I connect into the third leg of this harness with my PacComm Handie Packet TNC which I bring with me to the site. The Handie Packet is very small, and light and it contains a battery that is more than adequate to survive any reasonable trouble shooting operation.

What you plug into the Handie Packet for a computer or terminal depends on your needs or what you have along. I generally use a Radio Shack model 100 as that's my standard carry along computer. It also has a more than adequate internal battery supply.

Also on my test harness I have spare wires coming out that terminate in bare ends covered with pieces of sleeving. These wires are marked Trans Audio, Receive Audio, PTT, and Ground. These wires are used to attach a scope to monitor the audio signals, and the PTT line is available to key the transmitter if so desired.

Back to the function of the TNC-Terminal that I have plugged in. I can monitor what's happening on the frequency. If you have a PC compatible Laptop, I don't unfortunately, you can use the trace function of a TCP/IP program and monitor all layers of the data being passed. AX.25 or The/Net, interesting feature.

Another interesting note here, the Handie Packet has a command called MNonax25, which stands for Monitor Non-AX25. This is very useful and the decision on turning this on or off depends on my wishes to see only AX.25 data or print TheNETese. Unfortunately on a dumb terminal the TheNETese comes out as garbage, but the data is still visible.

At the Ascutney node site we have most of our receivers running all the time and they do not disable on transmit. Therefore with my test harness I can see both sides of the conversation and I can also connect directly to the node that I am plugged into, much like connecting to myself except I'm on a different TNC. Bear in mind the 2 TNC's are in parallel, the one I carry with me and the one at the site that is running TheNET.

It should be noted here that if the receiver at the site is muted on transmit there is a potential for both TNC's to transmit simultaneously, however I have not found this to be a critical during debugging..

Also a few TNC's out there will not work with this parallel scheme. Those would be the ones that do not mute the transmit audio when they are listening. The Heath Pocket Packet is an example of this and is the only one that I have found so far that sends dither tones continuously.

Since I made this test harness I have found life a lot easier during node site testing. I don't have a blood pressure problem, but it's better anyway.

Construction details: Parts list: 1 each 5 pin Din Plug RS #274-003. 2 each 5 pin Din In-line Jacks RS#274-006. Wire. Misc. sleeving

Wire all the Din plugs and jacks in parallel pin 1 to all pin 1's etc. Also connect another wire to each pin of one of the plugs and leave it hanging free. Strip and tin this free end, label it's function, put a hook in the tinned end and slip on a piece of sleeving, and it's done.

I use a 5 foot Din extension cable also available from Radio Shack, it's #42-2151 to connect from the harness to my portable TNC. It has a 5 pin din male plug on each end. Alternatively this cable can be fabricated to fit one's particular needs.

The MAPRA Digitell is printed by NEDA as a packet service. MAPRA members have joined NEDA so that they may share their news with the greater packet community. Good job guys and gals!

To Run TCP/IP or a Mailbox Program? By Cal Stiles, W1JFP

In this issue there is an excellent article by Steve, WD4MKQ, on TCP/IP and some of it's neat features. Bunny, W1RFP, and I conducted the demo that Steve refers to, but before you draw the conclusion that I'm a strong supporter of TCP/IP over the network, I would like to address how I am dealing with the current needs at my location.

Some time ago I read about TCP/IP and all the things it will do and the potential it has in Amateur Radio. This got me all excited, WOW! the latest thing; I have to get in on this!

I found a copy of the program for the Macintosh and tried to get it running; well, I did, sort of. Next, N1GYX, Ron, and I went to a meeting in Massachusetts put on by the Radio Amateur Special Interest Group of the Boston Computer Society. We heard an excellent presentation by Rick Booth, KM1G, and were able to come home and do more with the TCP/IP program. There appeared to be numerous bugs in the Macintosh version, so I switched to the IBM version and things went much better.

W1RFP, and N1GMC joined the fun and this allowed us to explore the capabilities of the various protocols and learn together.

It was great fun and an interesting experience, but now what do we do with this?

In reading the documentation and talking with TCP/IPers at Deerfield, it seemed to be the general feeling that, even under ideal conditions, TCP/IP does not run well under NET/ROM or TheNET. I can confirm this. My enthusiasm for the results of tests were underwhelming.

I understand NQ1C and WZ2B have had some success with it, but Bob, NQ1C, has related recently that the gateway he set up to run TCP/IP over the NEDA network has been utilized very little. Why? I suspect it is mainly because TCP/IP runs so poorly under TheNET and has little to do with the settings or performance of the network.

Another thing that surfaced in talking with TCP/IPers in other areas was that the

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N.Y. R.A.C.E.S. Packet Radio Backbone Network

The Radio Amateur Civil Emergency Service (RACES) has found that packet radio provides a most important communications resource in times of emergency. The Amateur Radio community has invested vast personal resources into developing these resources and as a result, extensive interconnectivity is available throughout most of the urban areas of the United States. New York State R.A.C.E.S. has already made use of this capability and many State, County or local Emergency Operations Centers have some level of Amateur packet radio capability. Packet radio as implemented in the current AX.25 protocol provides an robust means of transmitting information with extremely high levels of accuracy. Moreover, this means of transmissions allows for the automatic retransmission and linking of stations through remote "digipeater" or "node" sites, thereby extending the possibilities for interconnection from relatively simple VHF mobile, fixed or improvised emergency station locations to the County, State or even National levels with relative ease.

Although a good level of interconnectivity between most new York State urban areas exists, some areas are dependent on marginally reliable or overloaded links to provide interconnection. to some extent the State Emergency Management Office, Local Count R.A.C.E.S. and local Amateur Radio groups have been investing in improvements to the network. These efforts have made good progress, however, recent emergencies in Western New York and elsewhere have shown that packet radio emergency traffic volume can be very high since it has proved to be an excellent communications asset. The principal is need at this juncture is to improve the overall reliability and traffic volume capabilities of R.A.C.E.S. especially at the State and inter-county levels. Additionally some geographic areas in rural or critical "choke points" still have limited access to the packet network.

Major improvement in this critical communications resource can be affected with the upgrade and extension of existing R.A.C.E.S. packet "backbone" links as well as the addition of several user access ports in under served areas. These backbone links provide the higher speed point-to-point links that allow the large number of existing packet digipeater and node sites to communicate more efficiently with larger traffic volumes. More importantly, these improvements are sited in such a manner that alternate routes around heavily used parts of the packet network will be provided. this will greatly enhance the overall survivability of the network in the event of a failure or destruction of a critical site in the course of an emergency.

The R.A.C.E.S. equipment proposed will accomplish major upgrades and extension of the State's emergency packet communications by the addition of several high data rate (9600 baud) point to point backbone links. Several of these link sites will also provide an additional Local Area Network user access port to local county EOCs and other essential government locations that have limited existing packet access. These links will interconnect to the existing packet infrastructure at key urban and traffic "bottleneck" locations so major improvement will be effected in the overall packet network performance and data throughput during times of emergency. In several cases such equipment will provide the first reliable in-State high-volume traffic links. In other cases these links will provide crucial alternate packet traffic routes for critical communications corridors between the state's major population areas such as the North-South and East-West. Installations of this equipment will be made in existing geographic locations. Extensive SEMO, State Agency, County and Amateur R.A.C.E.S./A.R.E.S. cooperation is expected in the siting, installation and maintenance of these links, similar to what has been provided in the past.

The implementation of these packet network improvements is expected to be completed with-in 12 months of funding.

NY RACES Packet Network Site Equipment List

A.) Packet Radio 9600 Backbone Link

Note: Also note that this is a point-to-point backbone link requiring both ends to be functional. this equipment will only provide linking and cannot be used for individual user access.

Maxon UHF 30 Watt transceiver	$ 300.00
PacComm Tiny 2 Terminal Node Controller w/NB96 9600 baud modem	$ 230.00
Astron RS-35A 12 volt 35 amp DC power supply	$ 150.00
Larsen YA-5 yagi Antenna	$ 75.00
100 ft. Flexy 4 Antenna Feedline w/connectors	$ 80.00
DB Products DB4001-1 Pass Cavity Filter	$ 250.00
Control Matrix 4 port w/cables	$ 75.00
Each Link End Sub-Total	**$1160.00 x2**
Complete Link Total	**$2320.00**

B.) Packet Radio 1200 Baud User Access Port

Note: This package would be added to one end of a link site above for individual station user access point into system. It provides the Local Area Network (LAN) channel.

Maxon VHF 30 Watt transceiver	$280.00
PacComm Tiny 2 Terminal Node Controller 1200 baud	$120.00
Omni-directional ruggedized VHF antenna	$130.00
100 ft. Flexy 4 Antenna Feedline w/connectors	$ 80.00
DB Products DB4001-1 Pass Cavity Filter	$250.00
User Access Port Total	**$860.00**

Draft
State Emergency Management Office
N.Y. State Radio Amateur Civil Emergency Service
Digital Communications Network Advisory Committee

Background: For most of this century, the Amateur Radio Service has provided emergency communications in times of greatest need as well as technical innovation in communications for our Nation. During the 1980's Amateur Radio operators pioneered a new form of technology that has evolved to provide very reliable digital communications the form of packet, AX.25 protocol transmissions.

This technological capability has proven a great asset during recent emergencies since it permits large volumes of traffic to be transferred efficiently and essentially error free. Although RACES and it's predecessors have provided an important asset for innumerable emergency activities through it's voice and Morse code networks, additional operational and technical considerations must be taken into account to most effectively use packet and interface it with existing systems and organizations.

Purpose: The purpose of the New York State Radio Amateur Civil Emergency Service Digital Communications Network Committee is to advise the State Emergency Management Office Director of Emergency Communications and Warning in matters related to the use of digital transmission technology for emergency communications. This committee will also serve as liaison to the various non-RACES volunteer groups with digital communications networks that are available for emergency use by RACES or other Government entities. This committee's principal concern will be to improve the reliability, availability and inter-operability of these various network's in time of emergency. the scope of this committee will include the technical, regulatory, networking, operation, reliability, inter-operability and traffic handling aspects of State R.A.C.E.S. digital communications capabilities.

Composition: The State RACES Digital Communications Network Committee will be composed of 12 volunteer members. East District will be represented by a licensed radio amateur who is a member of the State or Local RACES organizations as well as an active packet radio operator. East District is encouraged to create an ad-hoc advisory committee with key representatives from local county RACES, Amateur Radio Emergency Service (ARES) and local amateur associations or individuals with operating packet network facilities or access who wish to make these facilities available for emergency use. These local ad-hoc district committees will make a recommendation to the District Director for the appointment of a representative and an alternate to the State Digital Communications Network Committee. Additional appointments may be made to the Committee to represent other volunteer agencies such as the Military Affiliate Radio Systems (MARS), Civil Air Patrol (CAP) or other groups with interest in Amateur packet operations. The term of all representatives will be 12 months and end on June 31 of each year.

Objectives: Although the committee cannot be expected to resolve issues in the many aspects of digital communications, it will strive to make current recommendations on the best use of this technology. The committee will address the following areas as they relate to packet; Networking, Technology, Operations, Traffic and inter-operability with other systems and modes. In each case the Committee will strive to make use of generally accepted Amateur practices, existing networks and other amateur capacities. Where appropriate the committee may provide guidance to other amateur organizations in accomplishing the overall emergency management objectives. the committee will also provide recommendations as the allocation of SEMO/RACES technical assets to improve the State's emergency Amateur digital communications capabilities. Since the nature of this technology is constantly evolving, it can be expected that this committee will have a continuing role in State R.A.C.E.S. operational capabilities.

Administration: The Committee will meet at least once per year at the State Emergency Operations Center in Albany. The full committee or sub-committees may meet as deemed appropriate by the Chairman. The Chairman of the Committee will be appointed by the Director. Regional ad-hoc meetings may be conducted as deemed appropriate by the Regional Directors or at least once per year. The committee is also expected to assist in the drafting of appropriate State R.A.C.E.S. operating procedures and in other packet related areas that may be deemed appropriate.

Revised August 30, 1991

On these two pages I have reprinted the information presented at the first NYRACES Digital Communications network Advisory Committee meeting, held at the NY State Emergency Operations Center on December 14, 1991. These papers are the same as Dana, WA2WNI had at the October NEDA Board of Directors meeting. See the minutes under Reports:Emergency Services Advisory Committee.

Split UHF Frequencies for Maximum Band Utilization

At the VE2RM:WQC node site I have installed a packet repeater. The repeater site is operated by the VE2RM radio club. Because of the split frequency (5MHz) nature of the repeater I was limited to installation of UHF links. I proposed that instead of running point to point backbone links on UHF simplex frequencies, which are scarce at the site because of the repeater, that we run our point to point links on half-duplex channels whose pairs are adjacent to one another. Thus as the repeater transmits on 446.025 and receives on 441.025, the links would all transmit in the region of 446 and receive in the region of 441. This implies that the sites we're linking at must also be using a split, half duplex, method of UHF channalization. This plan allows for many UHF links in and out of the same site.

The idea has been implemented now in both the Montreal and Quebec metro regions and seems to be without flaw.

—Burt Lang, VE2BMQ
—VE2RM:WQC node sysop

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bulk of their use was to pass personal messages to each other via TCP/IP, known as SMTP mail.

So what did I do to get this capability? Simple. I loaded my computer with a copy of the AA4RE BBS program and set it up to run as a personal mailbox. It takes little more computer power or disk space than TCP/IP. I now have a mail system that is 100% compatible with the NEDA network, and I can exchange mail with my friends, fully automated. It has all the capabilities and more of the personal mailboxes you are all familiar with. It will forward automatically any of my personal messages anywhere in the network, and it is fully compatible with all existing BBS's and personal mailboxes. Another plus, I have AA4RE set up to handle 4 simultaneous connects. It's a powerful tool and ideal for use as a personal mailbox.

Do I like TCP/IP, sure, it's great fun, and it's a fantastic learning experience, but it is my opinion that until full blown TCP/IP networks are in place, we are wasting our time trying to make it run properly under TheNET. Perhaps the better way to go would be to convert the NEDA network to TCP/IP and run TheNET into it. What say all you node site owners and maintenance types? Wouldn't you like to have PC's with hard drives on all those hilltops? Only kidding folks!

In closing I just want to say, if you have great aspirations about running TCP/IP over the network, you might want to think about what you are really trying to accomplish and consider some alternatives. I found AA4RE to be a very acceptable alternative for my needs, mainly personal mail.

Note: The opinions expressed above are strictly my own and do not reflect past present or future NEDA policy. <Cal>

Cal is currently president of MAPRA, the Mt. Ascutney Packet Radio Association, (The VNH folks), and acting chairman of the NEDA board of directors. He resides in West Lebanon, NH. His very patient XYL says he is addicted to packet.

Good Questions

Why does LONNY show up at the STMFRD node some times and why can't I ever connect to it?

The SCH145 node was, during band openings, seeing a nodes broadcast from the WECA node which was broadcasting the existance of LONNY. SCH145 node was improperly configured and was passing that information into the backbone. It was unconnectable for several reasons.

1. The node was too many hops away.

2. The band opening probably didn't last long enough for you to try it anyway.

For those readers that don't know, LONNY was a wormhole gateway between a node site in London England and one in New Jersey. LON = London, NY = NY City. LONNY. Tricky. SCH145 is supposed to be a user port. By NEDA specifications a user port displays on it's nodes list the nodes it hears over 2m but does not pass that node information over the backbone. For a short time SCH145 was configured incorrectly and was also hearing the LONNY node information from a node to the south. WECA is not close to SCH145. Pretty amazing actually. So, you couldn't get to LONNY because the path was terrible or non-existant. The NEDA technical committee and the operators of the SCH145 node are sorry for the inconvenience.

Why is it that there are some backbone # nodes that I can connect into, but then not connect out of?

There is a software switch in the TheNET software to disable the connect feature. When disabled a user can connect to the node but not connect away from it. This would allow a ham to check out the node's operation, but not to connect away. When the connect feature is disabled it is still possible to pass *through* the node transparently. Normally a user is not concious of the operation of backbone ports and most of them have connects disabled.

I've heard NEDA people talking about how connecting to a backbone node is bad. Can you clarify this?

Connecting to, and then from a TheNET Backbone node is not harmful if you are connecting to other backbone nodes. What *is* harmful is if you connect from a backbone node to a third station on the backbone frequency.

In areas where NEDA has had prominence, that doesn't occur very often at all. This is a new thing to packet radio. In most parts of the country the only backbones that aren't dismal are either very new or created using non-standard equipment to prevent such access. There aren't very many of those. We've started something here. In the north east abuse of backbones occurs once in a while and only on those where the connect feature been left on due to lazyness. Node owners who leave the connect freature on should be picked on, in my opinion.

One of the things I find comforting in my net excursions is the " RECONNECTED TO NODE SO-AND-SO" functionality. Which node protocol does that?***

This is a feature of TheNET 1.16. 1.16 is a German revision. This is one of the features that TheNET 1.16 has that TheNET Plus v2.08 does not. There are others. However, TheNET 2.08B has some features that 1.16

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the membership forms to do the BBS addresses correctly.

Technical Committee

WB2JLR, who is the technical committee chairman, was not present and had not submitted a report. Dana, Kevin and Tadd each reported that the issues that they were concerned with were all covered by other agenda items.

TCP/IP project

Bob reported on the TCP/IP project. This project was to create a link between three TCP/IP stations across the TheNET network such that we could explore the affect of TCP traffic on other network traffic. If this project went smoothly this would open the door to networking TCP subnets via the TheNET network. This would then be a prelude to replacing some network sites with more fancy hardware which could include TCP/IP software.

NQ1C, Bob said that when they first got the system [IPWMA] going there was a fair amount of activity by stations on the east end of the network in Connecticut and eastern Mass accessing the Rochester stations including WZ2B. The only station that Bob noticed using the system from the west was WZ2B himself. After several months the activity slacked off to the point where it was seldom used at all. Later still KB2JY, who runs the two meter repeater in Connecticut that was Bob's next shot east disabled the link from the repeater to his eastern Mass connect, apparently due to political considerations with the eastern Mass TCP group. Bob said that after it was of no use for a month that he disabled his end of the TCP circuit so that he could temporarily allocate the hardware for other purposes. Bob said that he was rather disappointed that the Rochester subnet wasn't as active as it was promoted to be. Bob said that he plans to have the system back on shortly. Hopefully the CT vs MA controversy will resolve it self as well.

Dana said that the new node in Binghamton has an affiliated TCP/IP server with NX9O. He would be interested in establishing a link to NQ1C. Dana said that there were a handful of IPers in the Binghamton area that would take advantage of the link. He said that there is a hotbed of IP activity in the area that will play with it.

Bob said that if he can't get a link into eastern Mass via KA1JY in CT that he'd work on his system to tie into east Mass himself.

Kevin asked if IP nodes should propagate as far as TheNET nodes or could it be limited in propagation range. Tadd said that the purpose of the NODE listing for an IP station was to allow other IP stations to pass traffic and that if the IP NODE listing doesn't go all the way that traffic can't flow between the IP stations. So, yes, the IP nodes need to be propagated. Indeed they might need to be locked in at various places to make them propagate further. This would have to be worked out on a case by case basis until enough IP nodes are linked into the network to make propagation less of an issue. Tadd said that users *could* use the IP NODE listings to connect into the IP stations but that isn't the primary purpose of it at this time. Tadd also added that when IP services start becoming more useful all network users will learn how to use the TELNET facility to connect around to the different IP nodes. Tadd mentioned an on-line callbook server in Buffalo at a university. He also talked briefly about the TCP equipment on line in Ottawa.

Kevin mentioned that the NYBGM node also had a callbook server. To access it you connect to NYBGM and then do FIND *callsign*. The node will take care of doing the lookup and you will get a printout of the call information.

Kevin restated that it would be better to have the IP nodes propagate than to have the IP stations chain through the network hop by hop. Tadd said that IP can't chain through the network. They absolutely have to see the destination IP NODE on their node list in order to pass data to it. Kevin said that only IPBGM would pass into the network from that port, not any of the other IP stations in Binghamton. Tadd said that this wasn't a problem as they could all IP into IPBGM and then back out across the network. This is built into the TCP/IP protocol.

Bob said that there was a problem with agreement with parameters among IPers. He said that what with all of the different versions of NOS (It's distributed in source form and modified heavily) there are even major performance differences in the programs, *beyond* parameters.

DxClusters

Dana talked about DXBGM which is now on line as a DxCluster. They tie into Rochester. WB2QBQ, Bob, Dana and Kevin praised the operation at Binghamton. Dana said that he things we'll see some good things come out of that area what with all of the good work and enthusiasm. Dana said that KK4L is running a local user LAN, a TCP port, a NOS node, a DxCluster, a BBS, backbones, a callbook server and all of this is done with one 386 PC and a pile of TNCs. (That got attention!). Cal and NQ1C, Bob asked immediately how KK4L got this all to work. Dana said that KK4L works for IBM and he guesses that he knows his stuff.

Cal asks if someone knows anything about getting a DxCluster started and that he can't get any answers from YCCC. He said that he has a group in his area that wants to get one on. Dana said that this sounds like a good Quarterly article if anybody who already has one on would like to write it.

Kevin reported that along with all of the neat things that NYBGM has that there were two knew nodes in PA that are tied into to NYBGM from the south.

Editor

Tadd said that the Annual hasn't been published since November 22 of last year. He said that this was bad because renewal members in a few weeks would be getting the same Annual that they got last year. This is very bad he said. It was supposed to have been updated every quarter when the Quarterly came out. Tadd added that this was because he has been a student and he lost the original document when his hard disk died at the same time his house burned down [excuses excuses! : editor]. Tadd said that he has not been able to catch up but that he hopes to do so over Christmas.

Tadd said that the new Annual will be republishing information from other documents published by software writers of BBS programs and other network programs. He said that he'd like to get it out in early 92. Tadd said the he has instructed the membership director to continue mailing out the old version of the membership package to renewal and new members but that he

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should include a piece of paper that says "This is the old package. A new one will be sent to you when it is ready." So, we're going to be shipping two membership packages to all members who renew or join after November.

Tadd said that the editor has seen no action on the Standards and Practices document. Dana put in that he has worked on it and that others have been working with him to plan the document.

Tadd said that he is also behind on the new HexiPus™ document.

Kevin asked why we were publishing stuff about BBSs and DxClusters in the new Annual. Tadd said that that is what we committed to do. Kevin asked if this was getting a little far afield from the direction of NEDA. He said that it says on a document he has in front of him that NEDA was dedicated to packet networking in the north east, and not necessarily to providing user information on services. He said that it might be an incidental part of the Quarterly. Tadd said that we have in the past been focussing on TheNET in the membership package. Tadd said that one of the resolutions from the July board meeting was to defocus our attention on TheNET and talk more about MSYS, NOS and BPQ. Dana said that he thought that was in regards to their application to networking. Tadd said that was correct but that we also, at least want to give some attention to the application of BBSs and DxClusters etc.. in regards to networking. Dana said that we should cover the correct application of the softwares in regards to networking. Tadd said that as far as the user information on how to get onto the different kinds of systems from the network that he things that it is common sense that if we expect to have people join the club just to get the magazine that we should give some support to those people by answering some of the more basic problems they have by giving user support material on each of the softwares. Tadd said that we talked about this at the last board meeting. The magazines didn't have much interest to the common guy. Tadd said that we should put out a magazine that will grab a person's attention so they'll say,"Yes, this is worth $4 per quarter." Then the new member will show our magazine to their friends and some of those people are bound to get involved in networking in one aspect or another and work toward the common cause of networking. Tadd said that we'll have sufficient information on building networks in the documents that this will take care of itself. Tadd added that he is not talking about taking the entire doc file set from each of the programs and publishing it. He said that he did think that it was important that he had a few pages in the Annual on how to do the normal simple things on each of the servers that just aren't available, printed, to most of the packeteers. Jim added that guidelines on the area of coverage of bulletins and regional information would also be excellent.

Kevin agreed that all of those things helped in terms of management and in having the network run efficiently.

Tadd said that the resource manual that he published in the Quarterly a few issues ago was mostly written by N7OO. He said that he'd done a large amount of work on it and intended to include that information in the Annual. He said that also has some ROSE stuff that will amount to a bunch of pages. He said that he also has stuff about PacketTen boards, TCP/IP and 56KB modems from the guys in Ottawa. Tadd added that by printing submissions by clubs we are increasing our ties to these groups which is important if we really want to be a *North East* digital association, and not a New England or New York digital association.

Jim said that one thing that is extremely important is that there is an incredible influx of new hams. He said that in the Springfield area 95% of these new hams are getting onto packet. Jim said that it is extremely important that these guys get supplied with good information if only to keep them from clutzing up the network.

Tadd said that he's gotten people referred to him by NX2P (who is very good about doing that) who say things like "there's no documentation on network!". Tadd said that one of the reasons that nobody has ever heard of NEDA is that many of our members resist joining up new packeteers because our information is too technical. WB2QBQ, Bob said that he has had a couple of contacts that have commented "Where else would I find information like this" and that it is great that we have such an excellent collection of documentation on networking. Bob said that he wouldn't recommend taking the comments of the last meeting as being the feelings of all of our readers.

Tadd said that he didn't thing that the magazine was terrible, but that we could take free stuff and add it to the magazine and the Annual to make it even better. Tadd said that he has not once turned down an article. He said that some times he saves them for a later issue but that he will always print an article. He said that he has not yet heard a request to spend less on the magazine. He said that he things that the documentation might be responsible for 50% of the membership. Kevin said that it was not responsible for 50% of the nodes added to the network. Tadd said that he thinks that he didn't think that Kevin was right. He said that Kevin might be correct for the nodes in the 'route 90 network' but he thinks that the documentation might be responsible for more than half of the nodes overall. He said that there are a lot of nodes in the country that are a direct result of the documentation, some of which aren't connected yet.

Dana commended the editor on the last Quarterly. Dana said that the addition of the table of contents was real good.

Cal suggested that we should have a list of what's in the annual in the Quarterly so that people who are not members but that get the Quarterly will know what they are missing.

Thanks and Appreciation

Cal brought up that he hadn't heard too many votes of appreciation for the supporters of club activities in the Quarterly and that he'd like to make official recognition for some of the major contributors so..:

Cal thanked Tadd for the job he was doing for the documents and wanted him to get public recognition for it.

Cal thanked Jim for generating a distribution list for all of the members on his BBS. Cal said that it is not any small task. Tadd said that he thought it was a pretty amazing effort. Cal said that Jim gets it done right when we need it every quarter and that it is great. Jim said that we could probably have other messages addressed to all of the members. Dana suggested that requests for articles for the Quarterly would be decent. Tadd said that he'd

have to keep it very small. [I didn't do this as I waited until the last minute to start working on the Quarterly/ transcribing the minutes. oops: Editor]

Ike, W2IH asked if the fact that the invitation to this board meeting excluded non-voting members was intentional. He said that a friend of his refused to come on this basis. He said that any organization that he'd seen would accept guests but that there was no mention in the invite. Tadd said that according to the NEDA Constitution the board meeting is not open to guests. Only those guests who were specifically invited by a board member would be allowed. Ike laughed and said that it's good that he didn't come or he'd be waiting outside right now! Dana said no, what would happen is that either we'd squeeze a membership out of the guy or join him ourselves out of our own pockets and that we've done both!. Lots of laughs.

Cal said that he didn't know how to temper the message any better. Dana said that the technical meetings and local development meetings are open to any who would like to attend but that the board meetings were usually so dry that people who are interested in the technical aspects of packet but not interested in the administration of the club would be board out of their minds at these meetings. Jim said that most board meetings are limited access.

Cal said that he'd also like to recognize Howie, WA2TVE, for his HexiPus™ shipping. He said that the packaging of the HexiPus™'s was outstanding.

Cal said that he'd also like to thank the treasurer for his management of both the treasury and the membership, neither of which are small tasks. Tadd said that he ships out thousands of packages a year including freebees, renewals and membership packages.

Cal also mentioned that Dana's efforts of finding affordable radios and publicizing was also a very good activity. Dana said that Bob, WB2QBQ was is right hand man in this activity. Dana said that he's delivered about 50 of the six meter rigs into network builders hands. He also said that he is looking for any other sources of radios that he could publicize. Bob said that Dana has assembled many radios at his own expense and stockpiled them for people.

Cal said that many other people had contributed and that if he missed any...

Jim, K1MEA said how about the guy who does the maps???? Lots of laughs. Cal said that this was a touchy subject as he had just now turned that job over to Tadd. Dana said that Cal had done a great job for so long and the he'd like to thank Cal for doing this, as well as for the work in putting together all of the agendas for the past bunch of meetings.

Dana said that he'd also like to thank Bob, NQ1C, for trying to keep up the distribution list stuff. Bob laughed that it's better to get four copies of the messages than one.

Bob, WB2QBQ, said that he thought that Kevin had done an excellent job at getting lots of radios for his own nodes!. Cal said that he'd like to recognize Kevin for making all of his nodes work.

Emergency Services Advisory Committee

Dana summarized a document that NY State has been sending out to all of it's county RACES offices, i.e. local governments. This is a document that New York State Emergency Management Office has been passing around the counties in NY State, to the local governments for the purpose of developing a state wide digital communications network that will be of and by and for RACES applications. It is intended that the network be governed by the NYSEMO and that the participating parties next down the chain of command would be the district offices of the SEMO and then the next hop down the chain of command would be the local county governments and governmental agencies. The implication of this document is real serious because they now have in hand federal dollars to purchase hardware to put in packet backbone linking. To NY State EMO's credit, rather than rushing out and saying "the hams usually get things done, here's the pile of money, go spend it." they did go to the extra effort of acquiring some consultants on what works and what doesn't. Dana said that he didn't write the document. Basically this document says that [RACES] is going to create this document. The purpose will be to serve the government. It will be composed of these items, and it will have dedicated point to point links. It will have user LANs. The LANs will not serve the purpose of linking. The network will serve EOCs. There's a whole bunch of good stuff in this. Dana said that he was very pleased to see that they decided to use this plan. If they can stick with this it would be great. If it slowly crumbles under political and peer pressure groups into something not recognizable as this document then that would be a shame.

Jim, K1MEA asked if we were talking about something that NEDA was already providing. Dana said that we were talking about a brand new 9600 baud or faster linked network state wide within New York state, on amateur frequencies for use by amateurs and RACES but with preemptive power by the government for it's own uses, whatever they may be. Kevin said that F.E.M.A. likes packet a lot and that they were very praiseworthy of packet in our area. Jim said that they like hard copy. Kevin said that they have seen that packet is a truly effective means of amateur communications.

Dana said that the next thing that was going to happen in NY RACES communications is that they are going to make a committee that will be composed of 12 volunteer members and they are going to get people from all parts of the state who are hams and are doing packet and are representative of their local RACES groups to get to together and work on a state-wide development plan. The bad thing about this, Dana said, is that this initial hunk of money that they had was tied to a F.E.M.A. matching funds project that had to do with money already allocated by local governments. When they solicited the 62 counties in NY State they only came up with about 26 or 28 counties who claimed to have something to be matched which Dana said suggested a pretty low expenditure rate by the counties. Dana said that these were further weeded a handful out when they found out that claimed funds actually hadn't been expended. They are looking for local governments to actually put funds on the line for local RACES use and that's what will be matched.

Dana said that he'd have more reports at subsequent board meetings on how this progresses. Dana said that this will be great because this will lead to redundancies that we need for the existing packet network. Dana said that he'd ask for permission to publish

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the document that he had with him so we can print it in the Quarterly.

Kevin asked who did the writing of the document. Dana said that it was a NEDA member, WB2WHD, Dan Whelan who is working as a paid consultant from the state university system to the state EMO.

Dana said that at a recent UNYRepCo (Upper New York REPeater Council) that on behalf of RACES he applied for blocks of frequencies on UHF and other bands for use in packet network development. He basically asked for a statement of agreement from UNYRepCo that they would work with us so that we could show F.E.M.A. that we were employing spectrum management as well as other techniques in our creation of this network. Dana said that the pieces are slowly coming together.

Dana said that people could send to get a copy of the document and to get on the mailing list to get other information when it becomes available is:

Attention Jack Abel
RACES DATA NETWORK
NYSEMO
Public Security Building
State Office Campus
Albany NY 12226-5000

Dana also gave a statement of support for NY State's projects on behalf of NEDA Emergency Services Advisory Committee. Dana reminded readers that we are in serious need of software to allow PC users to handily sysop TheNET nodes. This would be of great benefit to RACES radio officers in times of emergency. Please contact Dana if you have interest in working with him to create such software or if you already have or are creating such software.

[Tadd asked if we could have a recess. All agreed.

[Reconvened at 12:36.

Restructuring the Technical Committee

Kevin asked if we have a written directive for the areas that the technical committee operates in. Tadd said that we'd created one but then put it away as it was too restrictive.

Kevin said that he'd like to propose that we appoint a network development committee composed of volunteers to be elmer for new node ops who want to come into the network. They would put new node ops in touch with existing node ops to whom they might connect into the network. Kevin said that he was performing this duty in his area. Kevin said that he happened to be the president of the spectrum coordinating body in his area which he thinks is something these volunteers should also be a part of. This would keep node ops from being on the same frequencies in the same area which would cause degradation of performance. Kevin sited a couple of examples of these problems. Kevin thinks that this is something that could be done and he would like to have this formalized so that we could publish information about it in the Quarterly.

Tadd mentioned that he wants to be sure that some kind of system exists so that the maker of the maps gets fed information on network evolution so that the map maker job can be done without the map maker spending eons of time scouting the ever-growing network. Perhaps this committee could be assigned that task as well.

Kevin said that the NRS developed a bad reputation as a policeman. [see the minutes for the July meeting]. He said that we still need NRSs because we are having problems of ingress that aren't being taken care of by all of the node ops, like ingress of non-compliant nodes. This could be a serious problem if an odd-character bug occurred like that which happened two years ago.

Brief discussion took place about the ingress of bad character name nodes got into the network and caused multiple node crashes.

Kevin restated his proposal to form a network development committee of regional coordinators who will maintain a current list of node sponsors and development interests, provide technical assistance in engineering a node, which would come from NEDA documents, and assist in frequency coordination, i.e. act as a liaison between the node ops and local spectrum management bodies. Tadd suggested that this sounded like a very volunteer [time] intensive committee. Dana said that this sounded very much like the NRSs converted over to Network Regional Coordinators sounds like. He said that it sounded just like the converted positions. Dana asked why we needed to form a committee to do this. Kevin said that it was just so we could keep the NRCs talking to each other. Dana said that they should be doing that anyway. Tadd asked who would be chairing the committee. Dana asked if we had anybody that would chair the committee that was not already on one or more committees or already an officer. Kevin said that the chair would report to the board on different development committees. Tadd said that there would be no benefit to creating the committee until we could find a chairman. Dana asked how we should go about obtaining a chair. He asked if we should advertise in the Quarterly or did Kevin already have someone in mind or should we actively solicit somebody we thought was qualified. Kevin said we should actively solicit and seek for volunteers. Jim said that he'd like to see more diversification of the work to more of the members. Tadd said we definitely need more workers. Kevin said that Dana was already doing coordinating in eastern NY. Dana said that he already had four or so positions. Jim said that we've not done a good job at spreading the work load. Kevin said that he was doing coordinating work in his area. Dana said he was doing coordinating work outside of his area. Tadd said he keeps changing his area.

Dana asked if we believe that we should solicit through the Quarterly for somebody to run this committee. Bob, WB2QBQ said that this may be a way to solicit the membership to volunteer for things that need to be done. Tadd said that anybody who reads the minutes already knows that we are soliciting for all sorts of positions. He said that the last meeting was very obvious about that. Bob said that there have to be more people out there. Tadd said that this committee is definitely necessary but that this was what the technical committee was supposed to have been in the first place. Tadd said that he didn't think that we needed another committee but that what we need is to get the technical committee back into doing what it was created for. One of the problems with that is that our technical committee chairman was also assistant chairman of the board and an NRS and that this was bad news. Now he isn't aggressive enough to keep the technical committee in line.

Dana said that he talked to WB2JLR yesterday and Rich said that he has had a problem being a prominent person in the technical committee and that is why he was soliciting Kevin

to help him on some of the things he was doing. Rich had told Dana that he would be interested in turning over the chairmanship of NTECH over to a new board appointed person as of December of this year [1991] and that would leave him with just serving out the rest of his term as a board member which he would be able to do. Dana says that as we know being on the board and also being on the technical committee, as intensive as that has been, can be quite a trial. Dana said that Rich suggested that as he was doing the work of NRS before and since he was not going to be doing that job in the future that perhaps the job of NRS should be split into an obvious central NY/NE PA region and a western NY/western PA/Ontario region. Dana said that Rich had not given him any specific recommendations about people he had talked to about this already but that Rich had suggested some people who might be interested in taking up the position. Dana said that that might alleviate the problem with the technical committee needing someone who is doing a majority of just technical committee stuff.

Un-appoint NRSs

Tadd said that the NRS to NRC conversion has never really been covered and that this is not on the agenda today. He said that this needs to be taken care of. Tadd makes a motion that the board vote to un-appoint all of the NRSs at this time.

Discussion occurred briefly. Kevin seconds the motion. Jim said that he thought we should hold out until we have more discussion about the future of the network. Tadd said that the NRSs were no longer performing the function that they were created to perform, via the GANI and the first and second board meetings of 1990. Tadd further stated that NR1N, Linds, holds one of those positions and does not want it. Tadd listed the current NRSs and asked those present what there feelings were. Dana said that he agreed with the motion. Dana asked to be un-appointed at this time. Doc, WB2JAB, asked for a review of what an NRS was. Tadd gave a two minute review of it.

An NRS is a Network Regional Sysop. He was a creature created by the board of directors at our second board meeting in the spring of 1990 for the purpose of making sure that all of the nodes in 'The Network' conformed to the Guidelines and Agreements for Network Interface (GANI). The Network was the network run by NEDA, through these NRSs. The GANI stated that one of the requirements for being a part of the NEDA network was that there was one guy in each region who was responsible for seeing that all of the node ops in his area maintained his node correctly. The NRS became a focus of attention in his area, both good and bad attention. This was because the NRS's job was brutal. In one day the network could be laid to waste by one node. 1. the node could go away. 2. it could stop passing traffic or nodes broadcasts. 3. it could start passing nodes broadcasts and network level traffic that it wasn't supposed to pass. What traffic each node was supposed to pass was also laid out in the Guidelines and Agreements. The GANI was very clearly laid out in a fair but strict way. It drove the NRSs totally crazy. We lost several good people. WA1TPP was the first to go. NR1N was the second. People were just burning out. This was crazy. It was an interesting idea that led to the network growing from 8 multiport nodes to 42 multiport nodes in the space of a year and a half. But it did not allow for the propagation of the position. What we did by creating the position of NRS was that we made sure that nobody else ever learned how to sysop the nodes.

Jim said that the NRSs were the policemen in their area and they were blamed for anything that went wrong whether it was their fault or not. Kevin said that that was the problem. They [the node ops] thought that when a link went bad that it was a deliberate act by the NRSs locking them out. Kevin said that the purpose for the NRS as he thinks it should be is that the NRS should be there to help out a local sysop who needed more than one person to keep an eye on the node. Kevin said that he is a very firm believer that we need somebody like that. Kevin said that NRSs should still exist but that cooperation with the local NRS should be something that the local node ops could volunteer to do. If they don't want NRS support that should be fine with NEDA. Dana said he didn't like the name "NRS". Tadd said that he thinks that the existence of NRS in an area should be a local decision and how local sysopping is done/controlled/shared should be also be a local decision and should have nothing to do with the club NEDA. Kevin said that we should keep them but make them volunteer and that we should list those people who are operating as voluntary regional sysops. Tadd said let's just make a contact list and list it in the Quarterly. Kevin said that he's a regional sysop because he owns 6 multiport nodes. Everybody laughed and agreed that Kevin was a region.

Cal reiterates that we have a motion in front of the house to un-appoint the regional sysops. Tadd said that we'd be leaving the position in the constitution but that we wouldn't have anybody appointed to them. Dana agreed with that synopsis. Unanimously approved. Resolved that there are currently no appointed regional sysops.

The name "NEDA Network"

Tadd asked to make a resolution that the definition of the phrase "NEDA NETWORK" is to be removed. He said that as of present that the word is used in NEDA documentation to mean that network which is controlled by the NRSs. Tadd said that we should abolish that phrase since we no longer have NRSs. Tadd says that there are networks all around the North East that work very well, in New Jersey, Montreal, Ottawa and other places but that don't have backbones into the other networks. If we are trying to involve all of those networks in NEDA then we are ostracizing them by calling one specific little network "The NEDA Network". Tadd asked for a resolution that "NEDA Network" no longer refers to any particular segment of this and rather that there is a NEDA Network Scheme rather than a particular device. Jim said that he thinks that we should leave the name in place. We can change he added and we've changed a hundred times in two years. Tadd said that there were segments that were not connected and clubs that wouldn't participate in NEDA documentation because their networks weren't NEDA networks. The feeling of the people in these areas, Tadd said, is that if NEDA is a club to operate a network, and if their local clubs are clubs to operate networks then therefor NEDA is just another club like theirs. Tadd said that he'd like to see NEDA become an umbrella organization to promote networking regardless of how it was managed, throughout the North East.

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Thus the name North East Digital Association. We don't have a scoop on networking anymore. Lots of people are copying our ides, notably HTS free links, and are have a successful time of networking under their own names. Why should they join, and exchange ideas, with NEDA, Tadd asked. Tadd said that we are only calling the NEDA network the part which runs along interstate 90.

Discussion followed.

Tadd suggested that we say that we are the North East Digital Association, not Route 90. Tadd said he believed that Route 90 through New York and Mass was just a subset of the North East. He said that he wants to create a network that covers the North East. Right now we are calling NEDA the part that Kevin, Cal, Jim, Dana etcetera created. Tadd said that he wants to decentralize what the word NEDA means. So, the NEDA network would mean any network that was in the North East. The Route 90 network would be the Route 90 network which can also be part of NEDA, just like the network in New Jersey and the one in Ohio and the one in Ontario. Calling the part that runs from Boston to Buffalo the NEDA network but not calling the part in Montreal the NEDA network is dumb, Tadd said. He further stated that we should call the NEDA network anything that looks, sounds and feels like a network. Kevin said that at the original meeting we stated that we wouldn't want to be locked into TheNET. He says that we still aren't locked into TheNET.

Tadd said that there are three multiport nodes in northern New Jersey that are connected by multiport nodes that are running ROSE. He said that they are not calling themselves the NEDA network because we aren't calling them the NEDA network. Kevin said that we have never been against connecting up to other systems that were not TheNET.

Tadd said that his request is that the board resolve that we remove the name "NEDA Network" from the part of the network that runs from Boston to Buffalo so that NEDA can be free to promote networking throughout the North East. Tadd said that by calling the Boston to Buffalo network "The NEDA Network" and by calling our organization NEDA we are saying that the purpose of our organization is to run the Boston to Buffalo Network. Kevin said that it was originally. Tadd agreed. Jim said that he things that it changed about five minutes ago. Dana said that Tadd has a scheme and that he'd like him to put the rest of the scheme onto the table. Tadd said that what he really wants is for St. Louis Missouri to talk to Charlottetown PEI and Halifax Nova Scotia.

Tadd asked for his resolution. Tadd said that GLIDA is just a fine name for the western NY part of it. Tadd asked that "NEDA network" should no longer apply to any portion of the North East network. NEDA Node is just fine. Burt added that the definition of a NEDA node is a node that fallows the NEDA Standards and Practices. Jim asked for the resolution to be restated. Tadd said that the resolution is that we no longer title any particular network or any portion of networks as "The NEDA Network" and that we will come up with a designation for the portion of network that is currently called "The NEDA Network". Jim asked if we were doing this because NEDA had a bad reputation. Kevin agreed that that was the point. Tadd said no that was not the point. The point is that if you name an organization NEDA and then use NEDA to title some asset then you eliminate any hope of getting more assets of different names and having people treat the new, differently named asset as the same as the asset named NEDA. We are treating the newcomers as second class citizens. This is bad. OPEN calls there network OPEN. They are not interested in networking in New Jersey. We are. Now if we go and call anything that has to do with NEDA networking, "NEDA Network" then people who already believe that they have an OPEN network are not going to be interested in communicating. They may say "Sure we'll gateway with you" but ours is OPEN and yours is NEDA. Well ours is not NEDA. NEDA is a concept not a specific item. Tadd said that he wants to make NEDA now cover the North East, rather than the area now called the NEDA network.

Tadd said that we have a limitation on who can be on the technical committee as being someone who can connect into the network. What if Burt wants to be part of the technical committee. Kevin said that he would presume that the NEDA network would include the five nodes that are up in this area. Tadd said that that's not very nice because the people up here don't think that they are part of the NEDA network either. Kevin asked why. Tadd said that people up here ask questions like "When are we going to be able to connect to the NEDA Network?". They refer to the NEDA network as that part that we used to have NRSs managing.

Dana said that he things that Tadd helped propagate this by not documenting networks that couldn't be connected to from the NEDA network. Tadd said that while we had NRSs and the restriction that NRSs must control the NEDA network we had this problem. Kevin asked who created this problem. Tadd said that we went over this at the last meeting. Dana agreed that we shouldn't go into that wasted ground. Tadd joked that he came up with a neat scheme that worked for two years and now Kevin is picking on him that it finally got frayed around the edges.

Dana said that he agrees with the resolution. Dana said that if Tadd deleted from all of his documentation the phrase "The NEDA network" that the name would slowly dissipate. It may take a while he said. Tadd said that he was thinking of documenting all of the networks that he knew about and titling the tops of the maps, "documentation by NEDA" and then making associations between groups of nodes as being SOPRA, GLIDA, RATS and etcetera. He said that all we need to do is come up with something spiffy that describes the Karl, Herb, Cal, Ed, Linds, Cal, Arny, Ken, Jim etc. network. Kevin suggested that we had a New York state network could be called the New York State TheNET network and the Mass network could be called the Mass TheNET network. Many sillier ideas were passed around. Cal said that he thought that maybe we'd have to change the name of the club as well as the network.

Everybody agreed that our positive reputations far outweighed the small negative comments we've seen. Burt said that like politicians the negative aspects will disappear within a year or so because they get bored and go away. Tadd said that if we can hold more technical meetings that we'd grow like crazy. Kevin said that most people don't call it the "NEDA network" but rather "The Network". Tadd stated

that he thought his resolution was accepted. There were many good comments. All agreed that we've accomplished what we wanted. Cal joked that the editor would sort out the congressional record so that it stated what the editor wanted it to say. Laughs all around. Dana said that the recommendation would be that anybody who wishes to stick the NEDA name may call themselves a NEDA node. They can say "I'm a NEDA node in the FLRGOBL network". Tadd agreed that that was a good way to state it.

[Tadd left to grab lunch at this point, Cal, Kevin, Jim, Dana remain so we still had a quorum]

Kevin said that we didn't vote on this yet. Cal asked if we need to vote to accept this. Kevin said that we should have a consensus or count of hands. He added that we could count Tadd as voting for. Cal asked if everybody understood the resolution. Jim said not really. Bob said that it was just to play down the name of the network, not to really change anything. Burt said that it was to play down the name of the network but not the name of the organization. Dana said that the name of the organization could apply to anybody's hardware but that does not make it a NEDA network. There is a network in place, he added, that is mostly operated by NEDA members from which we want to remove the NEDA name. He said that a person can run a NEDA like node or run a network using the NEDA design philosophy but they can't call it the NEDA network. Jim said that he thinks that will be understood by the board but he doesn't think that the average user will understand. Dana said that we also agree that it will take a period of time to put this in place. Jim said that our attitudes have changed more in the last 3 months, since the meeting in Oneonta. He says that we've mellowed out. Jim said that if that's what Tadd needs to do then thats just fine. He said that he understands where it's going. Cal thinks it [this resolution] is a relaxing attitude on our part. Kevin said that's right. Burt said that you've [NEDA] grown bigger and you can't maintain the rigidity that we had so we have to relax it. Cal said certainly not the way it was going up to the last quarter. Bob agreed. Jim said it would have come apart the way it was going.

Cal called the question. Dana and Jim said yes. Kevin said no. Tadd was proxied. Cal didn't vote. The resolution passed.

Kevin's proposal

Cal went back to the proposal that Kevin made about network development committees. Cal said that NR1N sent him a letter about appointing network development coordinators. Cal asked if this is what Kevin just proposed. Kevin said yes. Cal said that he guessed that the feeling is that it is a volunteer thing. Kevin said that he was going to drop his motion since there is no longer a NEDA network that does node development. It's no longer part of this organization. We're no longer doing global node development. Dana said that NEDA the association still wants to promote the development of nodes and networks though. Kevin said that they no longer have a network there is no need for them to establish standards and parameters since they divorce themselves from networking. Kevin said he announces his resignation immediately from the Board of Directors of NEDA since we are no longer involved in network organization. Jim said that this was just semantics. Kevin said yes it is. He said that this is semantics that he's been trying to bring up for the past year so that we could accomplish both purposes. Jim said that you could still expand the network but just that you couldn't call it the "NEDA network".

Kevin said that he is on the NEDA board and he doesn't have the time to handle user support. Kevin said that when we founded the club we were going to establish a network under firm rules and take the heat for it just to demonstrate that it would work better. Along with that we recognized that we would have to support the users of our network with user information, maps and that kind of things with the Quarterly so that those who wanted to operate our network could do so. Kevin said that he viewed that as a separate and equal arm of our intentions in forming the organization and in supporting the larger networks as well. However, Kevin added, in what we've done in the past year we've divorced ourselves from real network management. We haven't been focussing on our network as much as we spent a lot of money on developing user type information and maps and Quarterlies and stuff that really look great but don't foster necessarily the kind of nuts and bolts activities that Kevin thinks we really need. Kevin thinks that we haven't organized our sysops well enough and we haven't spent the time to be an elmer to new nodes that come on line in the decent way that we helped each other get started. It's been very hit and miss. We jumped out into western NY very quickly and did not help a lot of people and a lot of missinformation got around. So, Kevin added, we didn't help foster networking or network software changes or things lilke that. We haven't been very thorough in the way we've worked with the network. We spent a lot of time on side issues and putting out political fires that have been raised. Jim agreed in that we had a bad time this past summer but that he doesn't think that Kevin should through everything out the window over a semantics issue which is really all this is. The whole reason that we are doing this is for users Jim said. The fine line, Jim said, is that we're trying to include other ideas from other areas. We were restricting the expansion because of the fact that it was called the NEDA network.

Dana asked what was changed by the resolution that makes Kevin feel that the whole picture is different. What has changed, he asked.. Kevin said that we've gradually moved our focus away from networking and network development and being really nose to the grindstone in that area and gotten more involved in producing maps and kind of existing in what is happening and letting people come to us instead of actively developing more information that would be of help to people. Jim said that he didn't see that at all because he spent a lot of time at Deerfield trying to iron out details with people from the north in regards to network planning.

Kevin said that we are not developing information to NJ7P, who writes TheNET software as to what we'd like to see. Jim and Dana chimed in that yes we are. Kevin asked by who. Jim and Dana said that Tadd has been doing this. Dana said that Kevin must have missed the wish list that Tadd sent around regarding the software changes he was asking for as well as his request for other items that NTECH might want. Dana said that he views what we are doing as a

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chance to pull in and concentrate on the developments on what we've been doing. Kevin said that he doesn't think that we should drop the NEDA network name without... Dana interupted to say that this wasn't to say that users couldn't continue to call the network "The NEDA Network". The thing is that the organization NEDA, which is trying to have a larger encompasing view as the association.. Kevin interupted to suggest that we create a larger encompassing organization. Kevin asked where the management was for the network we have. Dana said that based on the July board meeting the Standards and Practices document becomes the guideline and the responsability for managing the network falls on the people who are participating in each network. The point is to not have another NRS situation forced upon the networks by NEDA. Dana added that he still didn't understand why moving in that direction is something that Kevin says that he doesn't want. Kevin said that the network as a whole without management is a problem. Dana said this is not true. The purpose of putting the standards and practices document in place is to describe how this will happen. Kevin said that he is not going to go off and pull his equipment off the air or anything but that he wants to focus on node development and fostering new activity, and not on administration. Dana said that in this case it is very approapriate that Kevin move in that direction when his position on the Board of Directors expires this fall that Kevin not move to renew his position [as a Board member].

[Tadd arrived with boxes of Pizza]

Dana went on to say that Kevin should remain until his term expires so that he can help this all take place. To up and say that you resign today because you don't like the way that this went in, Dana continued, is dumb. Kevin said that it is heading in a direction that he doesn't have any interest in. Dana told Tadd that the resolution passed 4 to 1. Tadd said that Kevin's interest in the network in his area will probably be stronger, with the F.E.M.A. and R.A.C.E.S. plan than his interest was 8 months ago. Kevin will have a lot to work on, and within, the network. Kevin said that he agreed. Kevin said that what NEDA has developed into is now overshadowing the nuts and bolts stuff.

[at this time the meeting broke for lunch]

[resumed at 2PM]

Cal concluded that there were no committee appointments from the past discussion.

Dana recommended that we put together a bylaws committee. Tadd asked if Dana was volunteering to this committee. Dana said no but that we needed to create a bylaws. Dana said that if we think that it is important to have bylaws we should create a committee and give it a purpose and time pace. Dana recommended that we start the process to create bylaws and that the committee should report to the board at each minutes. Tadd said that he would do this job but only if he got feedback. Dana said that the feedback would happen if a small ammount of bylaws was presented at each board meeting such that the board could comment on it at the board meeting. Dana asked Kevin what he thought of this as Kevin is a member of several organizations that have bylaws. Kevin said you could get away without and that creating them was possible but a pain. Kevin strongly recommended that we not take that up at this meeting. Dana asked if Kevin wanted to table it until the next meeting. Kevin said yes. Tadd suggested that Dana create this committee between now and the next board meeting and then pass it to the board at the next Board of Directors Meeting. Tadd said that he seconds Kevin's request to table this. Jim added that we seem to grow as a beurocracy faster than we deal with beurocratic problems that we create. Cal said that something this major should at least appear on the agenda.

A conversation about how bad the NTECH and NBOD mail has been traveling. Tadd said that this problem is not caused by network performance but by software. Tadd said that everybody should send all messages to board members directly, not through any distribution list at any central location. Kevin said that he was using WA2TVE as a BBS. Tadd said to use W2XO.#WPA.PA for himself.

Schedule the next meeting.

Saturday Feb 1, 1992, 10AM in Agawam MA was chosen. NQ1C will host the meeting.

Old Business

Deficit Expenditure for Quarterly

Dana made a motion that we allocated a deficit expenditure of $162 to cover cost overruns for printing of the Spring Quarterly. Tadd seconded. Passed

Tadd moved that we allocated a deficit expenditure of $176 to cover cost overruns to cover printing of the Summer Quarterly. Dana seconded. Jim asked why this happened. Dana said that two quarters in a row we guessed at the cost of printing the Quarterly because wd didn't have hard numbers. Passed

At the summer board meeting we allocated $100 to cover second class postage, and we spent $436 to cover first class postage. We need to allocated $336.10 to cover that overrun. Dana made a motion to allocated $336.10 to cover the summer Quarterly postage cost overrun. Bob, NQ1C, said that back in April we proposed to do the bulk mailing and nobody's done anything about it yet. Cal said this was untrue and that he'd explain. Cal said that Herb has tried to apply for the permit. Motion passed.

Cal said that the reason that we don't have the second class postage is that the system for applying for second class now involves going through a Federal process, instead of merely a state process. Herb is very hopeful that this will be up and running by the time the next Quarterly is up and mailed. Herb was told originally that it would be much quicker and that when he finally applied he was told that it would take much longer. Tadd said that Herb still doesn't have the second class approval as he only got a copy of the Quarterly that had the minutes in it, showing that the board had approved the measure, a month and a half ago and the paperwork is now in process.

Funds for postage for next Quarterly

Tadd said that he does not have a number for how much it will cost to mail the upcoming Quarterly. This is because we now have a whole bunch more Canadian members and Tadd doesn't know how much it will cost to mail those, on top of the Second class postage rate we'll be paying for the U.S. members.

Tadd made a motion that we allocated $200 to cover postage for the Quarterly this time around. Dana in-

quired about the Canadian postage. Burt said that we were charging an additional $5 for Canadian memberships to cover postage. Tadd said that originally we were asking $5 per year additional for Canadian postage to cover the difference between U.S. mailing of the Quarterlies and Annual and the Canadian postage. $5 is actually not going to cover that difference but that's only because we are getting an incredible deal with the U.S. postage once we get the Second class approval. Jim seconded the motion. Passed.

Funds to print Quarterly

Next item, Cal said is for $550 to cover the fall Quarterly. Tadd made a motion that we allocated $550 to cover printing of the fall Quarterly. Dana seconds. Passed.

Funds for mail committee expenses

Next item, Cal said is to allocated $100 to mail map proofs out during the next Quarter. Tadd said that he'd mail copies of the proof maps to people with SASEs so that he'll get some back. On this information he'll base the next round of maps for the Quarterly. Tadd made a motion that the board of directors allocated $100 for a budget for expenses to fund the map making process for the next Quarter. Tadd will submit bills to the treasurer. Jim seconds. Passed.

Funds for editor expenses

Next item, Cal said is a request for $100 to be allocated by the editor to send master copies to the printer and to send proof copies to the board members. Tadd made a motion that the board of directors allocated $100 for the office of the editor to mail random proof copies of documents during the course of the next Quarter. Dana asked for Kevin to second as Kevin is the guy who wanted to see proofs of NEDA documents before Tadd and Dana send them out. Kevin said that he already resigned as board member. Tadd (who was out of the room) said I give up. Jim asked if Tadd was going to resign from the board as well. Tadd said that he didn't need to, that he's not on the board. Laughs. Dana seconded. Passed.

Kevin's resignation reviewed

All sort of casually agreed that Kevin's resignation was not accepted.

Hexipus Committee, Dana's connectors

Dana said that we should be advised that he has delivered $200 to the Hexipus Committee (Howie) and that he has not submitted that bill to the treasurar but that he would hold off on that until the treasury is beefed back up. Dana refered to page 31, middle column of the Summer Quarterly.

WB2JLR, Hexipus payback

Next item, Cal brought up an item submitted by Herb, WB1DSW, that we allocated $612 to pay back Rich, WB2JLR for the remaining outstanding balance for Rich's investment into the NEDA Quarterly. Tadd made a motion that the treasurer reimburse Rich Place the sum of $612 when the treasurer sees fit during this next Quarter, such that our treasury balance does not go below $1000. Dana seconded. Passed.

Elmira Correspondance

Dana briefly meantioned that a piece of correspondance that he got from the node op of the ELMIRA node asking for redundancy. Dana made note that he had received the correspondance and was remanding it to the appropriate Technical Committee member.

Constitutional change requests

Next item, Change requests to the Contitution.

Cal refered to pages 6 and 7 of the Summer Quarterly in regards to the Constitutional Change Requests. Tadd mentioned that Quarterly #2.1 contained a copy of the Constitution.

Dana said that he'd like each of the board members to make a statement in regards to the change requests. Tadd read out of the current Constitution the process that currently existed to change the Constitution. [Please refer to the minutes of the July 1991 meeting for more on this]

Ike asked if voting members of the club get to vote on Consitutional changes, like in the case of the U.S. Contitution or is this just a board item. Tadd said that it was just a board item. Everybody that is a voting member has the oportunity to submit a comment. Jim said he's never found the board to be really out of line with the voting members that show up. Cal said that voting members get to vote for the board members.

Dana suggested that the board members should make a statement on this. Dana said he has no comment. Dana said that he thinks it should be part of the procedure to have each board member make comments or suggest minor changes. Burt asked if any minor change suggestions that were made could be incorporated or would we have to wait two more meetings. Tadd said that the current Constitution says that we'd have to resubmit the change request and the vote on it again which would, yes, take two more meetings. The whole point of this process taking so long, Tadd said, is to protect the club from a Board of Directors that might contemplate making poorly thought out changes, in the future. This makes the process take some amount of forthought.

Cal called the vote. All voted in favor.

Tadd said that the next change request is to add section numbers to the Constitution. A short conversation occured as Kevin was looking for clarification.

Cal called the vote. All voted in favor.

The next item is a Constitution change request concerning election ballotting.

Tadd spoke on the current method for electing board members:

Given that there are more than three eligable volunteers for a position on the NEDA Board of Directors the board members are nominated automatically based on the fact that they showed up to half of the board meetings in the previous year and that their dues were paid to the point where they would not expire during their elected term if they are elected. There is no nominating committee. At the general meeting those voting members who showed are allowed to vote for three candidates. Only those who were willing to drive to the general meeting were able to vote. The reason that this was done is that the founders of the club desired that the control of the club would rest in the hands of those that were willing to drive. This was because at the founding of the club it was felt to be important that the club was administered by the network builders and that only people who were willing to drive would be able to effectively do this. Now that packet radio networking has expanded beyond the scope predicted by the founders of the club this method has led to an artificial limiting of the club's scope. [It also looks as if the best administrators aren't necessarily the same people as the best network builders :Editor]

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Tadd added that we [the Board of Directors] are no longer building the network We are now trying to cover and promote networking for a large region.

Tadd then read the change request from the previous Quarterly.

Tadd noted that if the club cannot find enough people to be on the Board of Directors to fill the board that the club is dissolved.

Burt asked for a clarification. He stated that the people who are presently on the board are automatically nominated. Tadd said yes, if they pay their dues and if they showed up to meetings. Burt asked how other people get nominated. Tadd said that if any voting member has been to two board meetings and pay the dues they are elected. Tadd said that before you had to be elected at the general meeting. Now the general meeting can be used for networking conferences or flea marketing. Tadd added that if there are not three available nominees are not available addional people could be appointed from those previous board members who have their dues paid.

Someone added that if we still can't find three new board members the club deserves to be disbanded.

Bob, WB2QBQ, said that he didn't think that it was necessary to mail self addressed stamped envelopes. He thought the stamps are not neccesary.

Burt added that there is no mention of a procedure for counting the ballots such that the anonymity of the voters is maintained. Tadd proposed that we make another change request.

Dana said that he thinks that the results should show a breakdown of number of votes by nominee. Jim said that it doesn't matter. Burt agreed. Dana also thought that the term "Consensus of founders and existing board members". Dana thought that the founders part should be stricken. Tadd said that the founders wanted to make sure that the club didn't run away and become another NEPRA. Dana said that he was satisfied with that answer. Burt asked if we have any board members once we reach that process. Jim said that we have three at that point. Tadd said that we still have the old board members as well as the hats don't change until the first meeting of the year. Dana agreed.

Cal asked if we were ready for a vote. All agreed we were ready for the vote. Dana, Tadd, Cal and Jim voted yay. Kevin voted no. Cal said that the motion passed.

Tadd made a motion to allocated funds not to excede $110 to cover postage and envelopes to mail the ballots. Jim seconded. Passed.

Tadd and Matt, N2MGI volunteered to mail the ballots out. Conversation about what deadline for balloting should be used and who should count. We decided that the ballots should be counted 30 days after they are mailed out by Tadd. Cal volunteered to count. We decided that the total number of potential willing candidates is around four.

Next item. Constitutional change request concerning the Annual General Meeting. This change would remove the requirement for the Annual Meeting from the Constitution. Tadd read the change from the previous Quarterly. This means that we could have a general meeting if we wanted it and we could have it any time of the year we wanted.

Burt asked if there was a legal requirement for the meeting. Burt said that where he's from there must be an annual general meeting for any corporation. Dana said that we weren't incorporated. Thanks to Burt for pointing that out though.

Cal asked for the vote. Passed. The Annual General Meeting is now optional.

New Business

1992 Freebee

Dana said that at the last meeting we discussed how we'd run out of the old freebee. He recommended that we have the new one ready in a draft format and a proposal for the next meeting. Bob, WB2QBQ said that we needn't approve the funds at this meeting. Tadd said the reason that we haven't had a new one for a while is that there were so many changes afoot that the way the club would be presented in the new freebee was too much up in the air to put any of it down on paper. Dana asked if Tadd would create a Freebee draft to present at the Februrary meeting.

Three Hop Proposal

Tadd said that the TheNET Sysop's help sheet on page 46 of the last Quarterly is his proposal to fulfill his duties as volunteered at the last meeting. Tadd added that Linds, NR1N, reviewed this proposal and what is printed in the Quarterly is the result of their collaboration. The only correction that is left here is parameter listed as a value of 202 should actually 203. Tadd asked for the Board to approve releasing this as a NEDA standard and he proposed that the Board ask the NH and MA nodes to test this. Jim asked if we needed to reburn the chips to test. Tadd said that the only parameter we can't change by remote control is the time to live initializer and because we are very confident in what that does we could accept the fact that we can't test that one. We can make a very good test of the parameter changes before we reburn the EPROMs for all of the nodes. Tadd said that the reason that he chose NH and MA is that there aren't many places that the network spreads outside of the control of the NEDA volunteers.

All board members present agreed that this change was a good idea. Cal said that the only problem was that the person who was going to be making the changes in NH and MA wasn't at this table. Tadd said that the only big problem with this change that he can imagine, that isn't already a problem, is that the nodes lists at certain nodes is going to get very small, BELNAP and HANOVR for example. Kevin said that it was going to improve network throughput. Dana agreed and stated that we'd get more robust curcuits. Kevin said there would be less poor routing information. Dana said that people would get a much better idea of what was adjacent. Tadd said that KA1NNN proposed that the nodes list get sorted by quality. Listing it by quality too would be good. Cal asked who would draft the article. Tadd said that he'd work on it with Linds. Matt, N2MGI, suggested that we wait to talk to Linds before setting a date.

Doc, WB2JAB asked if he'd only see three nodes on each node he connected to. Tadd said no, you'd see all nodes that were within three hops of the current node. Doc asked how a user would know what route to take to go to a distant node. Tadd said that maps would be of major help. Dana said that good info texts would be good. Tadd said that he thinks that everybody in the north east should have a copy of the Quarterly every quarter and that we navigating networks would be no

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problem for anybody. They'd all have maps.

A discussion occured about how difficult it is to figure out the map of a TheNET network without a copy of the Quarterly. Tadd said that with TCP/IP and ROSE it's not even possible. With TheNET it's merely hard.

Dana made a motion that the Board of Directors makes a recommendation that the parameters are tested from Chester east as soon as is expedient. Tadd seconded. Pass.

A discussion occurred about how many TNCs away nodes would show. The concensus after review of the data was that nodes would show up 3 nodes away. I.e. KINGTN would show at BERK and STMFRD.

US Mailing address of Board Members

Dana makes a motion that the US Mailing address of all of the board members and committee chairpersons of NEDA be printed in every Quarterly. Tadd seconded. Discussion occurred. Tadd asked if we should have phone numbers. Dana said that it would be optional. Jim said that people could get ahold of him via packet mail. Cal said that he didn't want his address listed at all. Dana withdrew the motion.

Circulation of Quarterly in Editors report

Dana asked that an accounting of the distribution of the Quarterlies printed be given in the editor's report each quarterly Board of Directors meeting. Jim seconded. A discussion about advertising occured. Jim said that he'd investigate PacComm, Kantronics and etcetera to see if he could get advertising. Discussion about the value of a page of advertising occured. Cal stated that in order to get advertising we'd have to know how many Quarterlies we deliver. Passed.

Cal said that the report can be given on toilet paper and that the editor can scribble down this information from memory sometime when he is sitting where toilet paper is convenient.

Standards and Practices

Long discussion occurred which Dana and Tadd noted for the new document. No Board conclusions.

Dana made a motion that the meeting is adjourned. Tadd seconded. All approved. Meeting closed at 4:42PM.

—recorded by WA2WNI

—transcribed by KA2DEW

[In an executive session called a few days after this board meeting, WA2VAM asked that the resolution banning the name "NEDA Network" from a node system be overturned. The board so moved.]

Good Questions from page 16

doesn't have which has made 2.08B the more desirable software. Which software to use is a current issue among NEDA Technical Committee circles.

Is it up to each member to forward dues when appropriate or is there some renewal notice that goes out for NEDA?

Eventually WB1DSW will send you a 'dunning' letter to tell you it's time to renew. If you sent it in earlier it would save Herb time and a stamp. I just renewed for 5 years to get it out of the way.

Thanks to all the people who come up with these questions. Thanks also to those who answer them!

73 until next time.

—That answer guy

NEDA Constitution

1. Purpose of this Article

a. This article lays down the rules for operation of the North East Digital Association. No other N.E.D.A. document may change or replace the rules set down in the Constitution. The Constitution may only be modified by the procedures described herein.

2. Officers

a. There are six Board of Directors positions plus appointments and alternates. The board of directors are elected for two year terms. Three of the directors are elected annually.

3. Appointments

a. Appointed positions include Treasurer, Chairman of the General Meeting, Membership Director, Board Member Alternates, Chairman of the Technical Committee and Network Regional Sysops. The Network Regional Sysops report to the Chairman of the Technical Committee and are considered members of the Technical Committee.

b. Other appointments may be made at the direction of the board of directors. These appointments are made by the board of directors. Only voting members may be appointed to a committee chairmanship, board member alternate or office position. Board members may also serve other appointed positions and appointees may serve multiple appointments.

4. Board Member Alternates

a. Each board member may appoint an Alternate to represent him or her at board meetings in the event that the board member is unable to attend. The Alternate must be approved in advance by the board during a board of directors meeting in which the board member presenting the candidate for Alternate must be present. Appointment of an alternate may be discontinued at any board meeting at the request of the board member the alternate represents, or with a majority or tie vote of all the board members.

b. The Alternate has full voting rights at board meetings in the absence of the board member which he or she represents.

c. If the service of a board member that an alternate represents ends the alternate position is also ended.

5. Removal of a Person From Office or Revocation of Membership Privileges

a. A petition for removal of a person from office or membership must be submitted in writing to the board of directors with a minimum of four signatures of voting members. The petition must be presented at least two weeks before a quarterly board meeting in which it is to be acted upon. The board of directors must vote on the petition at a quarterly board meeting. The document will be kept in the club archives unless removed and expunged at a later board meeting.

b. This person being removed is held as a removal-pending member for one quarter and then is reviewed at the following quarterly board meeting. This issue is then presented in the minutes in the Quarterly so

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that it may be reviewed by all the membership and commented on before the following quarterly board meeting.

c. A person removed from membership is not eligible for voting membership unless the privilege is restored by an act of the board of directors at a later date.

6. Membership

a. Membership is open to all. Dues are at least 2 levels for individuals. One of these levels is called Voting Membership. Voting membership is open to all except as defined under 'Removal' above.

7. Dues

a. Dues are paid to the Membership Director or his designee who then forwards the funds to the Treasurer. Dollar values of dues is set in the NEDA bylaws but the dues level for a Voting member is $25 or greater. Dues are used to fund:

- operating expenses for the club;
- development costs for club products that facilitate network growth.
- documentation in the form of an Annual and Quarterly
- documentation in the form of free technical documentation distributed for the benefit of packet networking.
- documentation in the form of free promotional literature on NEDA and on packet networking.

8. Membership Privileges

a. Voting Members receive the 4 copies of the NEDA Quarterly per year and a copy of the Annual each year. The Annual is delivered to the member at renewal time (after renewal) or at the anniversary of the member's membership.

b. Voting members are invited to attend the Board of Directors meetings, run for office annually and vote for officers by mailed ballot.

c. Additional privileges are defined in the bylaws.

9. Board Meetings

a. A Board of Directors Meeting is a physical gathering of the board members.

b. A minimum of 4 directors must be present to open a board meeting. The board meetings must be announced via the NEDA Quarterly or via packet mail to every voting member at least two weeks before the meeting. If a quorum of board members is not available to start the meeting a new meeting must be scheduled and new announcements must be sent.

c. Board meetings must be held in different cities each time to make it possible for all voting members to have equal access to the proceedings of the board of directors.

d. Board meetings may be attended by voting members or those given special dispensation by the board of directors or any approved by the bylaws.

e. Board meetings must be held 4 times per year. The 4 quarterly board meetings are held as close as possible to the first week of January, April, July and October. Additional board meetings may be called by the board of directors with a vote of 4 board members.

A board meeting is required in order to:

- spend club funds.
- discipline a member;
- change the appointment for network sysop or chairman of any committee.
- re-assignment or assignment of a board member alternate;
- change the constitution or bylaws
- appoint the chairman of the annual meeting or change that appointment.
- form or disband any committee.

f. Actions which must occur at the board meeting include the reading of a current NEDA treasury report. This will be recorded in the minutes and printed in the subsequent NEDA Quarterly.

10 <removed>

11. Elections

a. Elections are held by mailed ballot after the October Board of Directors Meeting. Immediately after the October Board of Directors Meeting attendance of each member, over the previous year's board meetings, are tallied. Any voting member who is paid up for two years from the end of October of the current year, who has attended half of the year's board meetings, and who are not already in the middle of a two year term are automatically nominated and are listed on the ballot.

b. This ballot is sent to all NEDA voting members complete with a self addressed stampled envelope. The envelope also has a return address label with a note stating that the return address must be filled in for the ballot to be counted. The ballot includes instructions that the voting member should order all of the listed people in ascending order, 1 for first choice, 2 for second choice. This way the results will still be meaningful if one or more nominated members are unavailable to fill the positions. The ballots are mailed to the club POBox and then counted by the recording secretary or one of the board members whose term is not expiring this year.

c. The ballots must be mailed out to all NEDA voting members within two weeks of the board meeting. They must be returned to the club POBox within five weeks of the board meeting. Results are included in the Quarterly or are mailed out separately to all members to arrive at least a week before the winter board meeting.

d. The results include the following statistics:

- total number of ballots sent;
- total number of ballots returned.;
- list of all nominees;
- list of the three new board members;
- and a list of nominees who abstained but who had a higher vote than the selected board members.

e. If three new board members are not chosen by this process then a board member may be chosen by consensus of the founders and the existing board from those voting members who were previously board members and who ended their term as board member in good standing. If there still are not three eligible new board members then the club must be dissolved.

12. Board Member Responsibilities

a. Board members or their alternates must attend the quarterly board meetings or obtain an alternate to handle meetings the board member cannot attend. Failing to do so twice in a single year is grounds for removal from office. Board members or their alternates are also obligated to attend additional board meetings called by verbal agreement by any four of the board members.

b. Board members represent NEDA and are obligated to carry out the NEDA Charter in regards to dealings with other members and non-members.

c. The board of directors as a body are responsible for seeing that the NEDA Quarterly and the NEDA Annual are published on time. As these are the instruments of the club and as the NEDA Quarterly is the means by which the financial operations of the club are published to the membership, the paying membership has the right to expect these documents.

13. Filling Spots on the Board Due to Board Member Resignation

a. If a board member resigns or is otherwise no longer available to fulfill the remainder of his or her term a new board member is selected to serve until the next annual meeting. The new board member is selected from those voting members who were previously board members and who ended their term as board member in good standing.

14. Network Maps

a. Network maps must be maintained and are presented in the Quarterly. The maps must consist of at least the callsign, nodename, location (at least relative), user access frequencies for AX.25 (if any) and backbone connectivity for all NEDA network nodes.

15. NEDA Quarterly

a. The NEDA Quarterly is published within 60 days after the quarterly board meeting. The Quarterly is fully described in the bylaws but as a minimum must include the minutes of the board meeting (including the treasurer's report), the network maps, and membership roster.

b. The board may delegate the task of production and mailing of the Quarterly but maintain the responsibility.

c. In the Fall edition of the Quarterly whatever results that are available from the annual elections are printed. This may include the nominees or the final results.

16. NEDA Annual

a. The NEDA Annual is the current statement of NEDA packet network involvement. This includes user information for usage of the NEDA network as well as lessons in the technology needed to fulfill the goals of NEDA as stated in the charter.

b. This document is delivered annually to each and every paid member of the club. This document should be updated at least once annually to reflect the current state of networking technology in use by NEDA.

c. The Annual is the responsibility of all of the board members. The board may delegate the task of production and mailing of the Annual but maintain the responsibility.

17. Changes to the Constitution

a. Changes to the Constitution may only be made by the following process:

b. At a regularly scheduled quarterly Board of Directors meeting a proposal for a change is submitted in printed or typed form (8 copies) to each of the Directors, to the editor and to the secretary. The item must be presented in person by a NEDA voting member.

c. The format of the submission is in bulleted sections. The following sections must be included: TITLE, PRESENTED, BY, BRIEF, SPECIFICS, PURPOSE. The page is headed with "Constitutional Change Request". TOPIC is followed by one line which identifies the change request. PRESENTED is followed by the date of the board meeting. BY is followed by the name and callsign of the author. BRIEF is followed by a single paragraph description of the change. SPECIFICS is followed by a paragraph by paragraph description of the changes including reference section and paragraph numbers. PURPOSE is followed by a justification for the change. A sample change is available from the club.

d. The proposed change is entered into the minutes of the Board of Directors meeting at which it is presented. Discussion may follow. No vote is taken at this time.

e. At the following board meeting the change is brought up as old business and after discussion is either ratified or not. No change is made if a tie occurs.

f. If a change is ratified then the new copy of the Constitution is printed in the following Quarterly in its entirety.

18. Changes to Bylaws

a. Changes to the bylaws may be made at a single board meeting with the vote of a majority of the board members present. If a tie occurs then no action is taken.

19. Grounds for Dissolution

a. If the board of directors doesn't hold 4 board meetings during the year or if the club is unable to hold elections or there were not three eligible and willing candidates or if the Quarterly in at least it's minimum form) isn't delivered on time then the club must be dissolved.

20. Dissolution of the Club

a. After paying out any pending bills the treasurer is directed to write a check for the remainder of the club treasury to the American Cancer Society and to close the all club bank accounts. The name of the club (i.e. North East Digital Association) and it's logo NEDA become the property of the founders of the club, WA2WNI, WA1TPP, KA2DEW, K1MEA, NQ1C, WA2VAM, KC3BQ, to do with as they wish. All paperwork pertaining to software management of individual nodes is delivered to the node/site managers.

SERVERs Accessible From The NEDA Network

The following is a list of PBBS's that can be reached from the existing contiguous. Some paths have nodes that are not participating in any point to point dedicated linking. I have tried to provide the best path from inside the existing contiguous network. Please keep in mind that in packet radio, change is the rule (much like other branches of amateur radio).

Note: Do NOT forward 3rd party traffic long haul. It might be nice to send traffic that is destined for a PBBS direct to that PBBS but there is no reason to do long haul forwarding of bulletins and traffic that you can't route to it's final destination!

The first nodename in each connect path is a network port that is propagated. Other nodenames may be PBBS, non participating nodes or ports which are not visible outside of a local node stack.

Class 1: wireline from participating node
Class 2: direct from 220 or 440 port on a participating node
Class 3: multi hop from participating node via non 2meter links
Class 4: direct connect from 2m or HF port on participating node
Class 5: digipeater or multi-hop over 2m or HF from a participating node.

PBBS servers

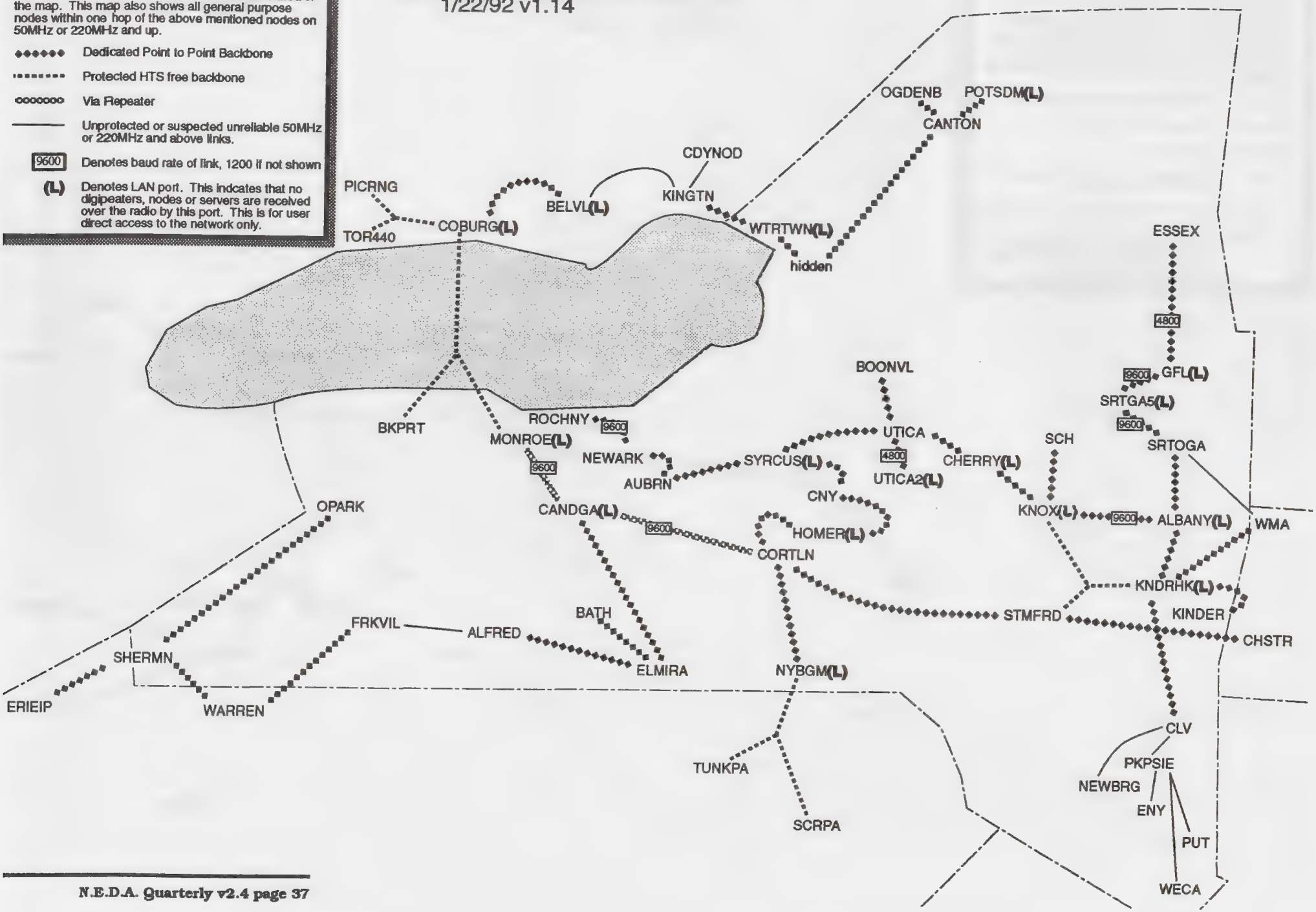
call	path	class	member	node	location
n1api	forward to K1MEA *	?	n	n	meriden ct
kb1bd	kb1bd-4 v 609655	1	n	R	heightstown nj
k2cc	potsdm,bbscc	2	y	y	potsdam ny
kc1ce	nshr22,lincon,pvd,bbs1ce	3	n	y	cranston ri
k1cf	nshr22 arlng2,bbs1cf	2	y	y	chelsea ma
wb2coy	clv440,bbscoy	2	y	y	poughkeepsie ny
wb1dsw	kngstn,bbsdsw	1	y	y	e. kingston nh
n2dsy	n2dsy-4 v 201746	1	n	R	patterson nj
w1edh	berk,bbsedh	2	y	y	glasonbury ct
ka1edy	nshore,nby,bbsedy	2	n	y	newbury park ma
w1eoo	spfld2,wa1uqc-8,icrc07,w1eoo-1	5	n	n	winstead ct
ka1goz	wndhm2,bbsgoz	2	y	y	nashua nh
wg1i	nshr22,chlsea,bbswgi	3	y	y	medford ma
ka2jxi	ogdenb,bbsjxi	1	y	y	ogdensburg ny
kq1k	salt,kq1k	1	n	n	dennis ma
k1mea	westma,k1mea-4	1	y	y	easthampton ma
ka2msl	clv440,bbsmsl	2	n	y	newburgh ny
ns1n	scit,ns1n	1	y	y	scituate ma
kb4n	wndhm2,bbsash	2	n	y	nashua nh
w1ny	spfld,bbswma	1	y	y	springfield ma
w2oy	opark,w2oy	1	n	y	orchard park ny
ka1pep	nshr22,ka1pep	2	n	y	lawrence ma
wa1phy	nshr22,bbsphy	2	y	y	mitre arc bedford ma
kc1pk	kngstn,bbspk	1	y	y	wenham ma
wb2psi	rfcarc,bbsrfc	1	n	y	rochester ny
?wa0ptv	shermn,sherm1,wb0ptv	?	n	n	fredonia ny
wa2pvv	knd220,Net40	2	y	y	valatie ny
wb2qja	clv440,pkpsie,put,weca13,wb2qja-4	3	n	n	white plains ny
ka1rci	lincon,bbsrci	1	n	n	lincoln ri
w2rgi	crtlnd,w2rgi v w2seu-1	5	n	n	oneota ny
wa2rkn	clv440,pkpsie,bbseny	3	n	y	poughkeepsie ny
k1rqg	mwv,k1rqg-1,k1rqg				bucksport me
k3rli	tunk4,k3rli	2	n	n	wilkes-barre pa
wa2sna	berk,connct,kg1o-9,nnj3,wa2sna-1	5	n	n	hawthorn nj
ka1srd	wndhm1,bbssrd	4	n	y	fitchburg ma
ae1t	belnap,ae1t	4	n	n	plymouth nh
ka2tfc	frkvil,ka2tfc	4	y	n	little valley ny
ka1thm	lincon,pvd,bbsthm	3	n	n	mattapoisett ma
wb2tup	watert,bbstup	2	y	y	watertown ny
wa2tve	utica,bbstve	2	y	y	utica ny
k1ugm	mbos1,k1ugm	2	y	y	wakefield ma
wa2umx	srtga5,wa2umx	2	y	y	saratoga ny
k1uol	forward to wb2coy or n1dcs		n	n	bethel ct
k1uaq	belnap, lark, k1uaq	5			belnap NH

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

NY Abbreviated map
1/22/92 v1.14

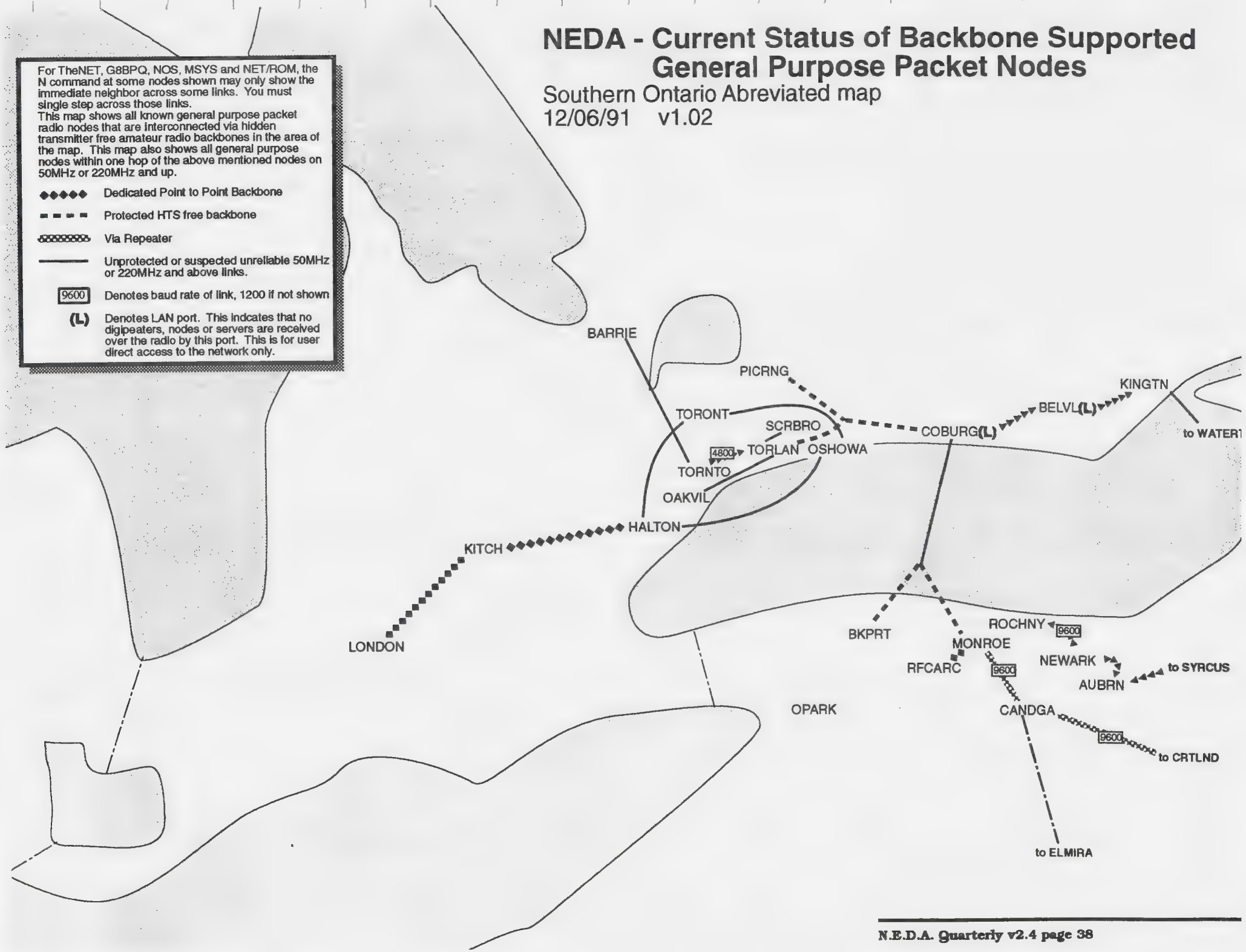
For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.
This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

- ◆◆◆◆◆◆ Dedicated Point to Point Backbone
- ▪▪▪▪▪▪▪▪ Protected HTS free backbone
- ooooooo Via Repeater
- ——— Unprotected or suspected unreliable 50MHz or 220MHz and above links.
- [9600] Denotes baud rate of link, 1200 if not shown
- (L) Denotes LAN port. This indcates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.



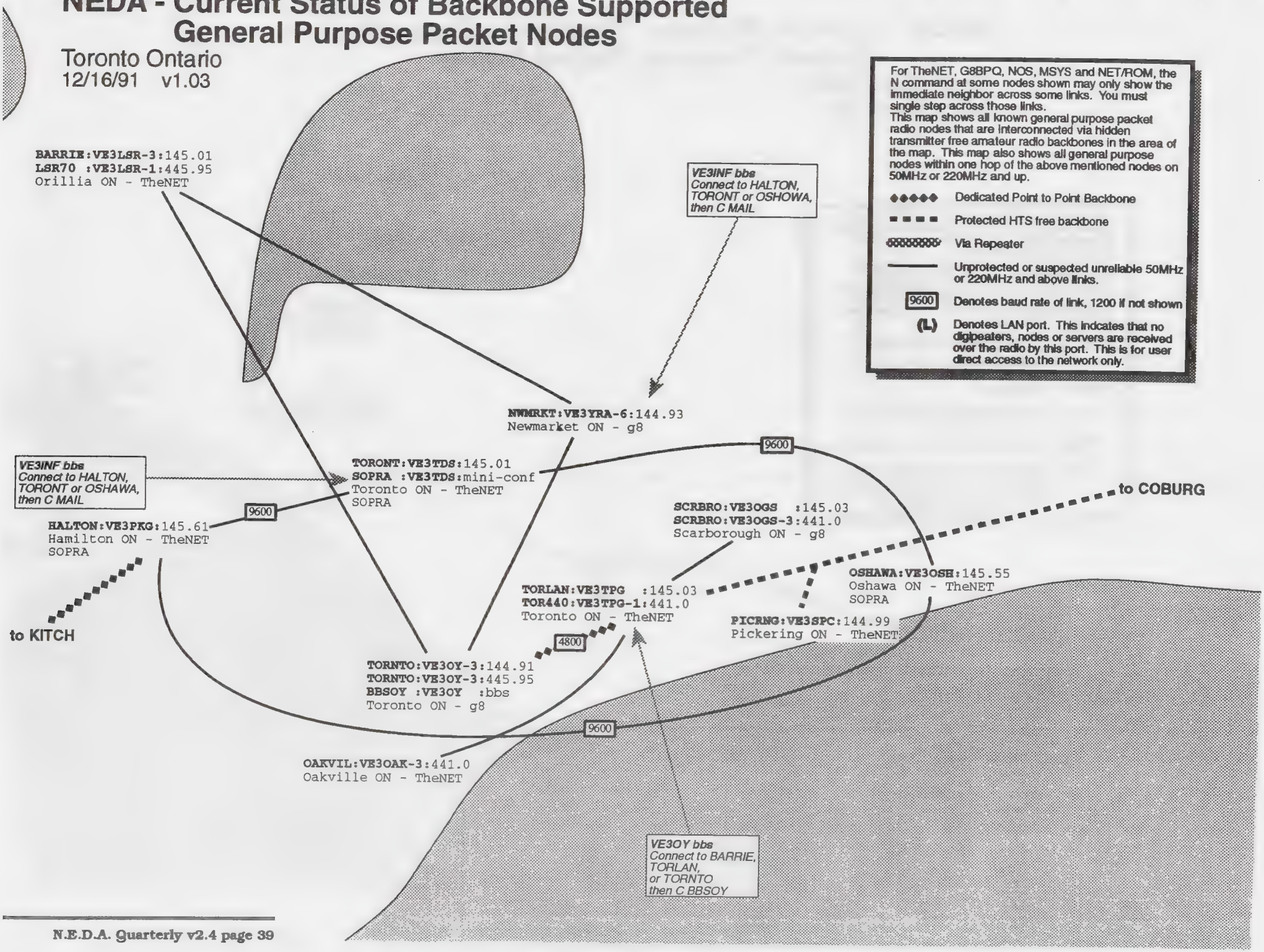
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Southern Ontario Abreviated map
12/06/91 v1.02



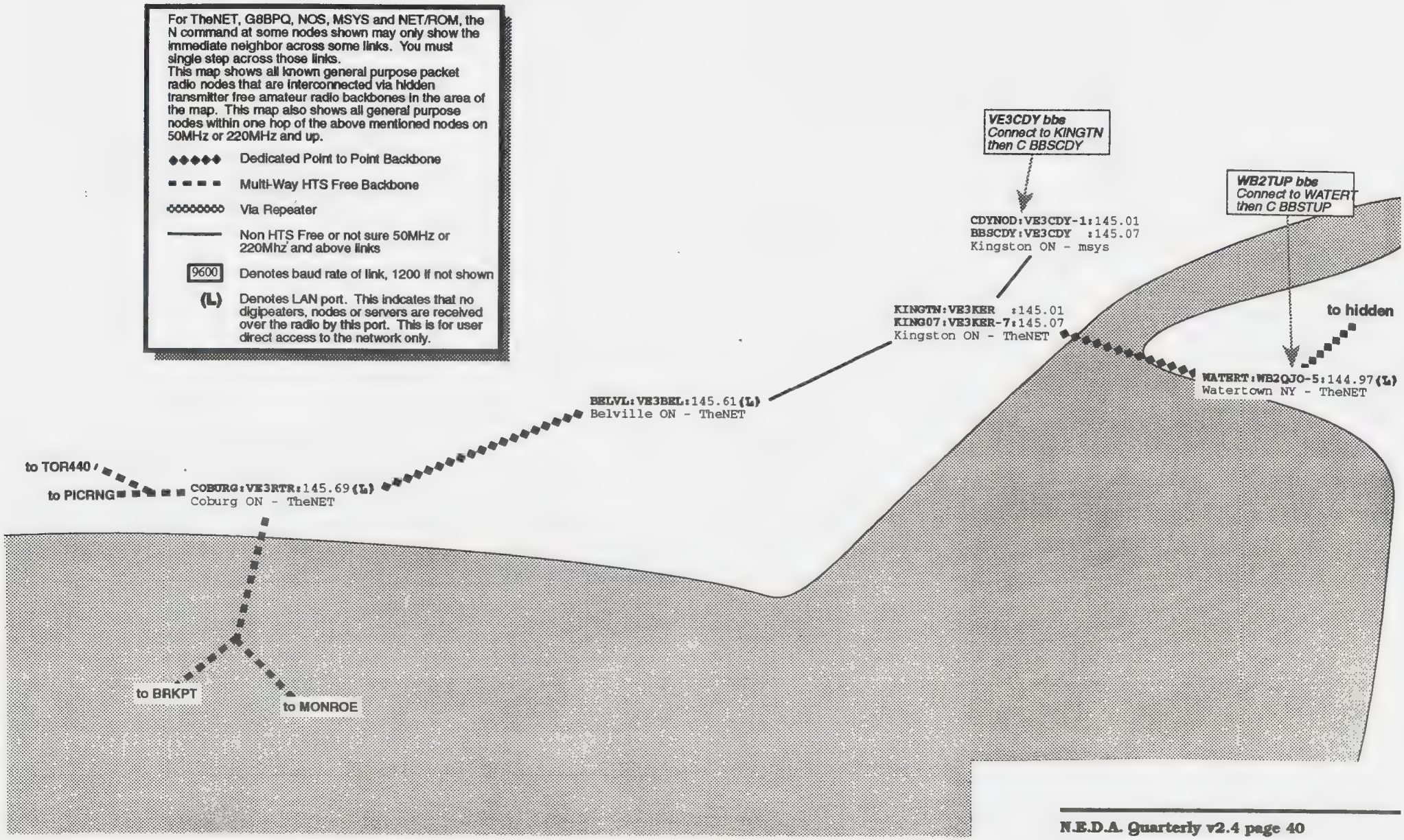
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Toronto Ontario
12/16/91 v1.03



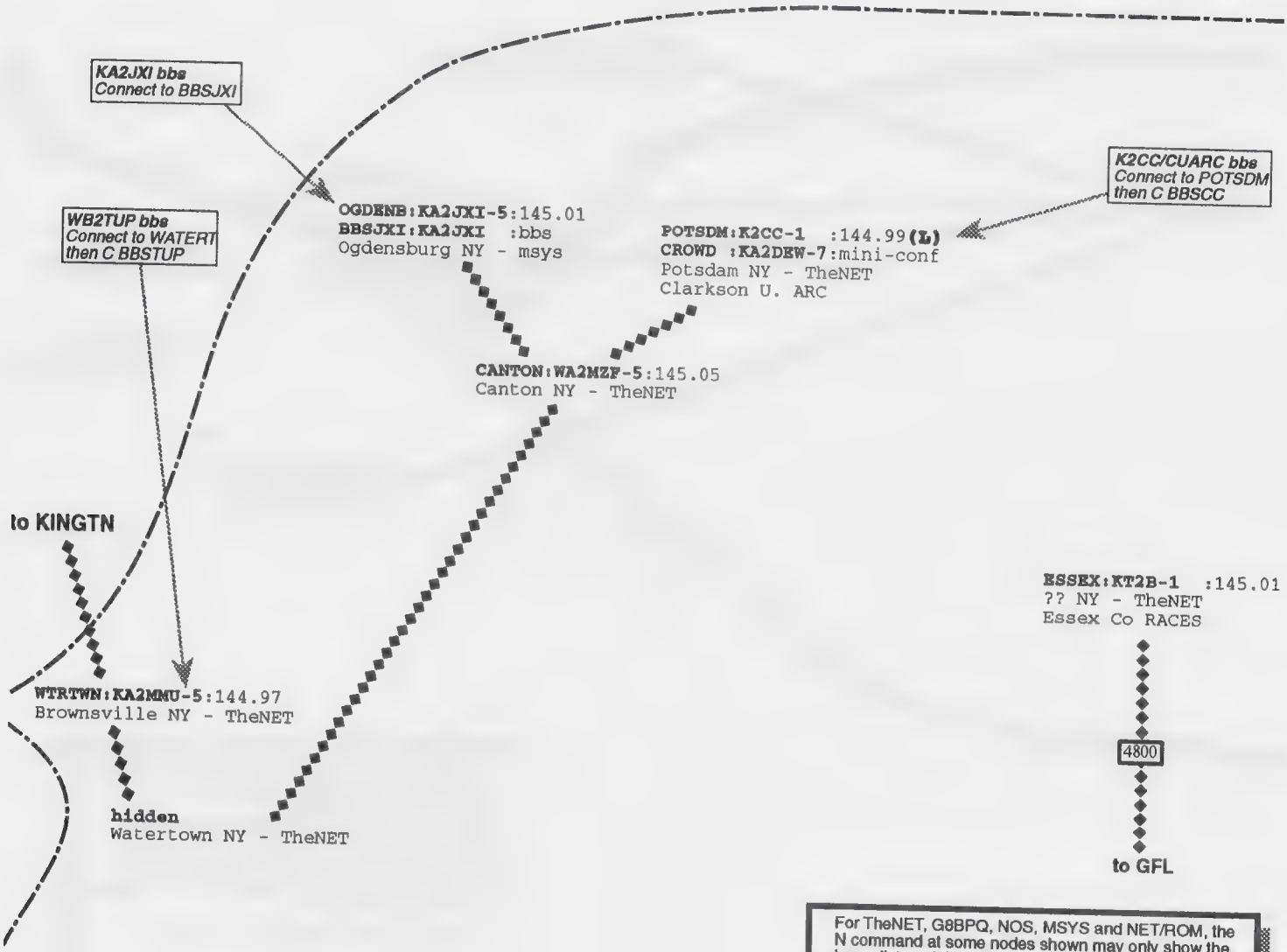
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

SouthEast Ontario
1/22/92 v1.02



NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Northern New York
12/12/91 v1.02



For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.
This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

◆◆◆◆◆ Dedicated Point to Point Backbone

▬ ▬ ▬ Protected HTS free backbone

○○○○○○○○ Via Repeater

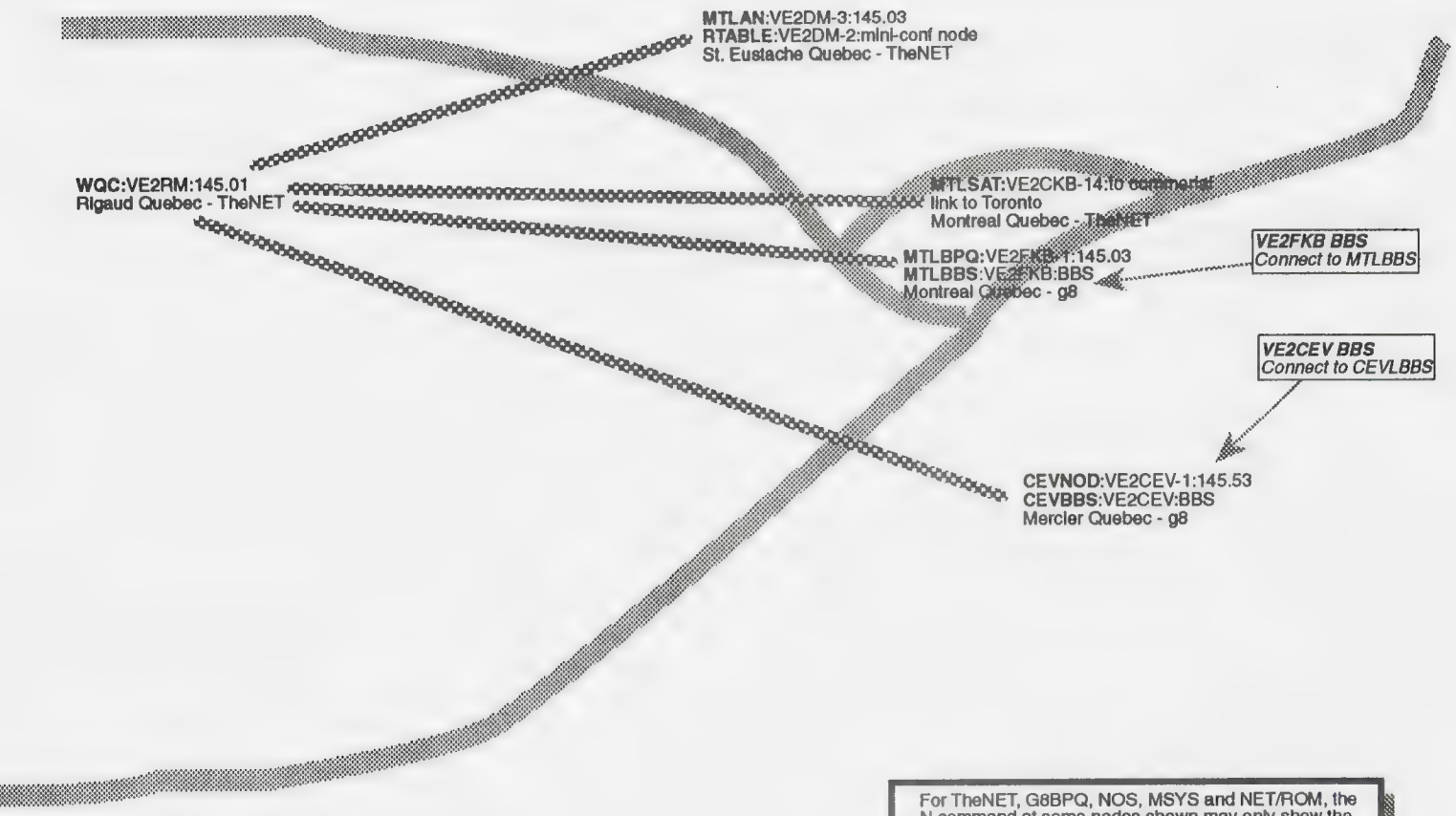
——— Unprotected or suspected unreliable 50MHz or 220MHz and above links.

[9600] Denotes baud rate of link, 1200 if not shown

(L) Denotes LAN port. This indcates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Montreal
12/10/91 v1.03



For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.
This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

◆◆◆◆◆ Dedicated Point to Point Backbone

▬ ▬ ▬ ▬ Protected HTS free backbone

Via Repeater

——— Unprotected or suspected unreliable 50MHz or 220MHz and above links.

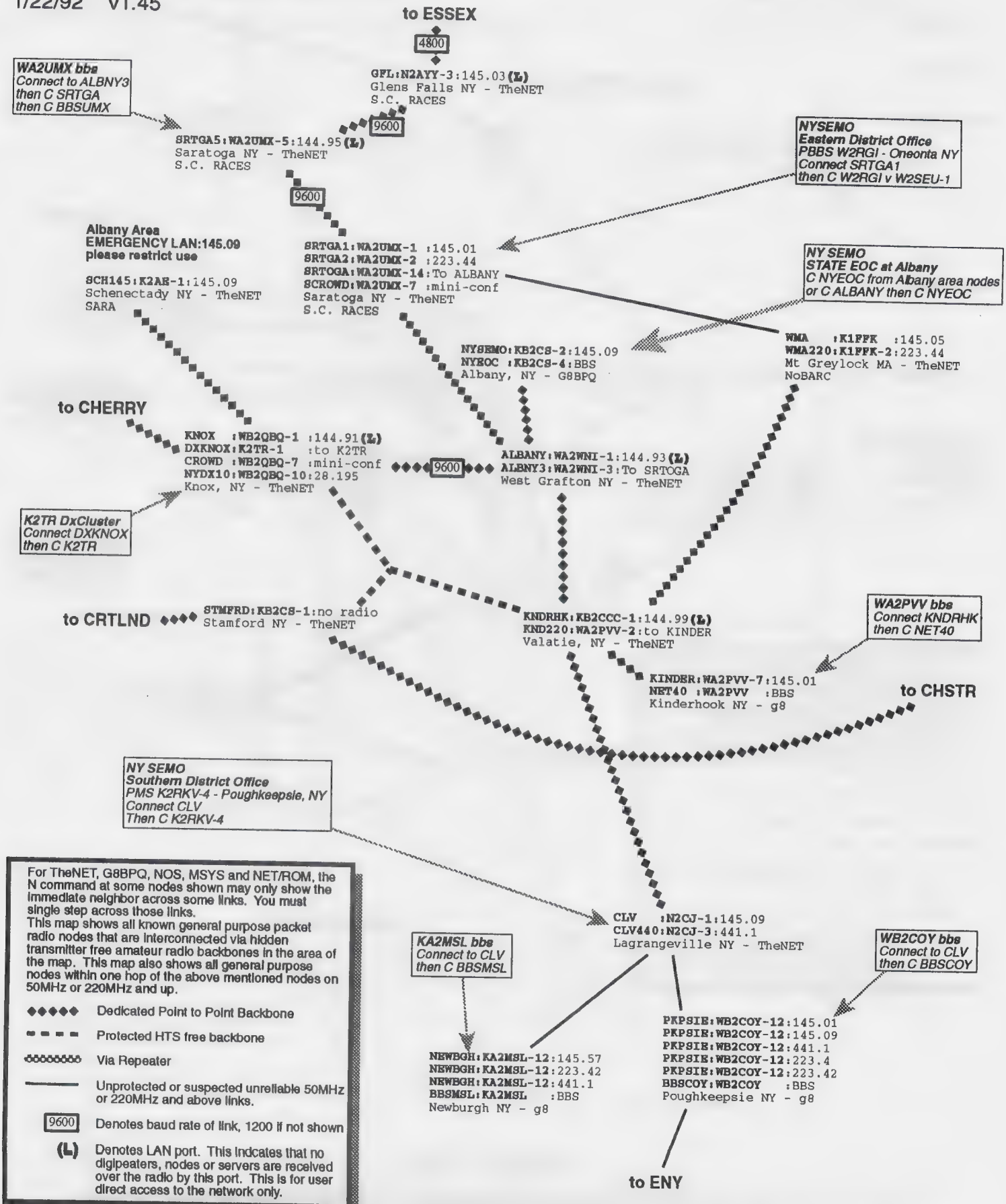
[9600] Denotes baud rate of link, 1200 if not shown

(L) Denotes LAN port. This indcates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Upper Hudson Valley of New York

1/22/92 v1.45

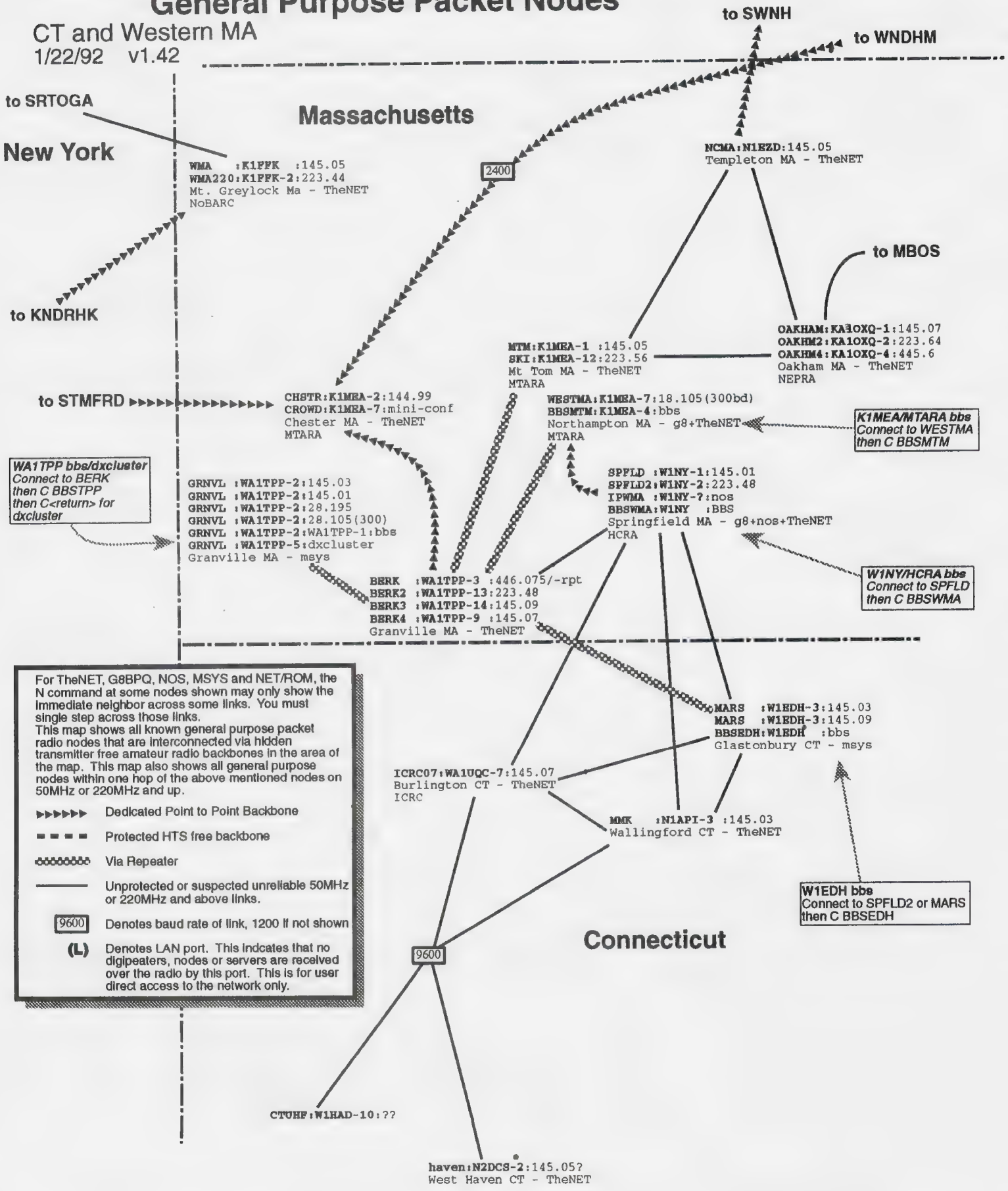


For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.
This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

- ◆◆◆◆◆ Dedicated Point to Point Backbone
- - - - - Protected HTS free backbone
- ◇◇◇◇◇◇◇◇ Via Repeater
- ——— Unprotected or suspected unreliable 50MHz or 220MHz and above links.
- [9600] Denotes baud rate of link, 1200 if not shown
- (L) Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

CT and Western MA
1/22/92 v1.42



NEDA HexiPus™ Order Form

Use this order form when purchasing HexiPus™ board kits by mail from the POBox or from a NEDA consignee at a special event.

Use the latest version of this form if possible. See bottom of the page for release date.

You do not have to pay shipping if you are getting the HexiPus™ from a NEDA agent/consignee.

To Consignee: Please make sure that each purchase is handled with one of these forms. Correctly document funds exchanged, check numbers, purchaser's name and address if not by cash; and quantities of each kit type delivered.

To Mail Purchaser: Please fill out all sections of the form except those marked "For Office Use Only".

This will help our treasurer track the sales of the product so that our club may be run efficiently and above board.

Thank you and good luck with your node!

Purchaser Information

Name

Address

City

State/Province

Country

Zip

Callsign (Optional)

Date Purchased

✔Cash ☐ Check Number ✔US bank ☐ ✔Canadian ☐

Amount ↓

If funds are Canadian compute exchange rate as best you can. If check is drawn on a Canadian bank add $5 U.S. to total.

# of Board+Diode Kits (US) x$22.95 +

# of Complete Kits (US) x$29.95

subtotal in US funds:

If by mail add $4.00 per unit
No mail delivery outside U.S.

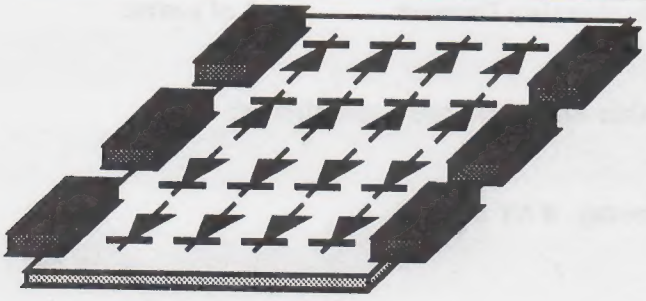
Total in US funds:

Agent/Consignee Information

Name

Event

Notes: (specify connector type, male/female)



The NEDA HexiPus™ Kit is, as of this printing, available in three formats. Board with diodes; Board with diodes and female connectors; or board with diodes and male connectors. The supply of the female connectors is limited as they were purchased surplus. Please specify your preference in the notes section above. The shipper will give you male connectors if females run out.

Funds for the sale of HexiPus™ boards go to NEDA. NEDA is a non-profit club.

For Office Use Only (Treasurer)

Date Rx by Treasurer: **Date Tx to HexiPus™ Cmty** **Deposit**

Order Form Date: 09/16/91

North East Digital Association
Membership Application

Welcome to packet networking. This is the official membership application form for N.E.D.A.

Some General Stuff About N.E.D.A.:

N.E.D.A. was founded on Sept. 17, 1989. N.E.D.A. holds 4 scheduled yearly Board of Directors meetings announced one month in advance. The club committees sponsor technical sessions throughout the year in various locations as well. The board of directors meeting is open to voting members only, all of whom are invited via packet mail @ their Home BBS. Technical meetings are open to all.

Club funds may only be allocated at the board meetings, the minutes of which are printed in the NEDA Quarterly.

The board of directors consists of 6 hams who are elected for 2 year terms by the voting membership. The board of directors appoints an editor, chairperson to the general meeting, treasurer plus any additional department heads as they see fit.

The dues structure of NEDA is as follows:

Associate network support membership is $10. Associate network support membership with quarterly updates is $15. Voting membership in N.E.D.A. is $25. Voting members decide which 3 members will be appointed to the board of directors at the general meeting. (pending constitutional review at July board of directors meeting)

Non US memberships will be asked a surcharge to cover postage and banking fees.

Membership in the U.S. is $15/year for Associate Membership with Quarterly or $25/year for Voting.
Membership in Canada is $20US/year for Associate Membership with Quarterly or $30US/year for Voting.
Mail completed application with check to: **NEDA POBox 563 Manchester NH 03105**.
$10 of the NEDA membership dues, for the year starting at date of receipt, is for a subscription to the NEDA Quarterly for one year. Return this bill form with remittance.
If paying with check drawn from a Canadian bank please add $5U.S. Please compute exchange rate and make amount equal the dues amount in U.S. funds.

Name:

Home Phone Number:

Address:

Work Phone Number:

City:

State:

FIDO, Bitnet, Compuserve or Internet address:

Country:

Zip:

Membership Desired:

# of years:

Callsign:

Other clubs you are a member of:

Home BBS (include hierarchal address)

County, if NY state

The BBS address is used for club mailings so please keep the club informed of any changes.

☐ Check if RACES or ARES member

FOR OFFICE USE ONLY:

RCT:_____ CNO:_____ ACK:_____ DDP:_____ DOE:_____ PKG:_____

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

SE ONT, NY, MA, VT, NH, RI, CT Abbreviated map
1/15/92 v2.13

For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.
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◆◆◆◆◆◆ Dedicated Point to Point Backbone

▬ ▬ ▬ Multi-Way HTS Free Backbone

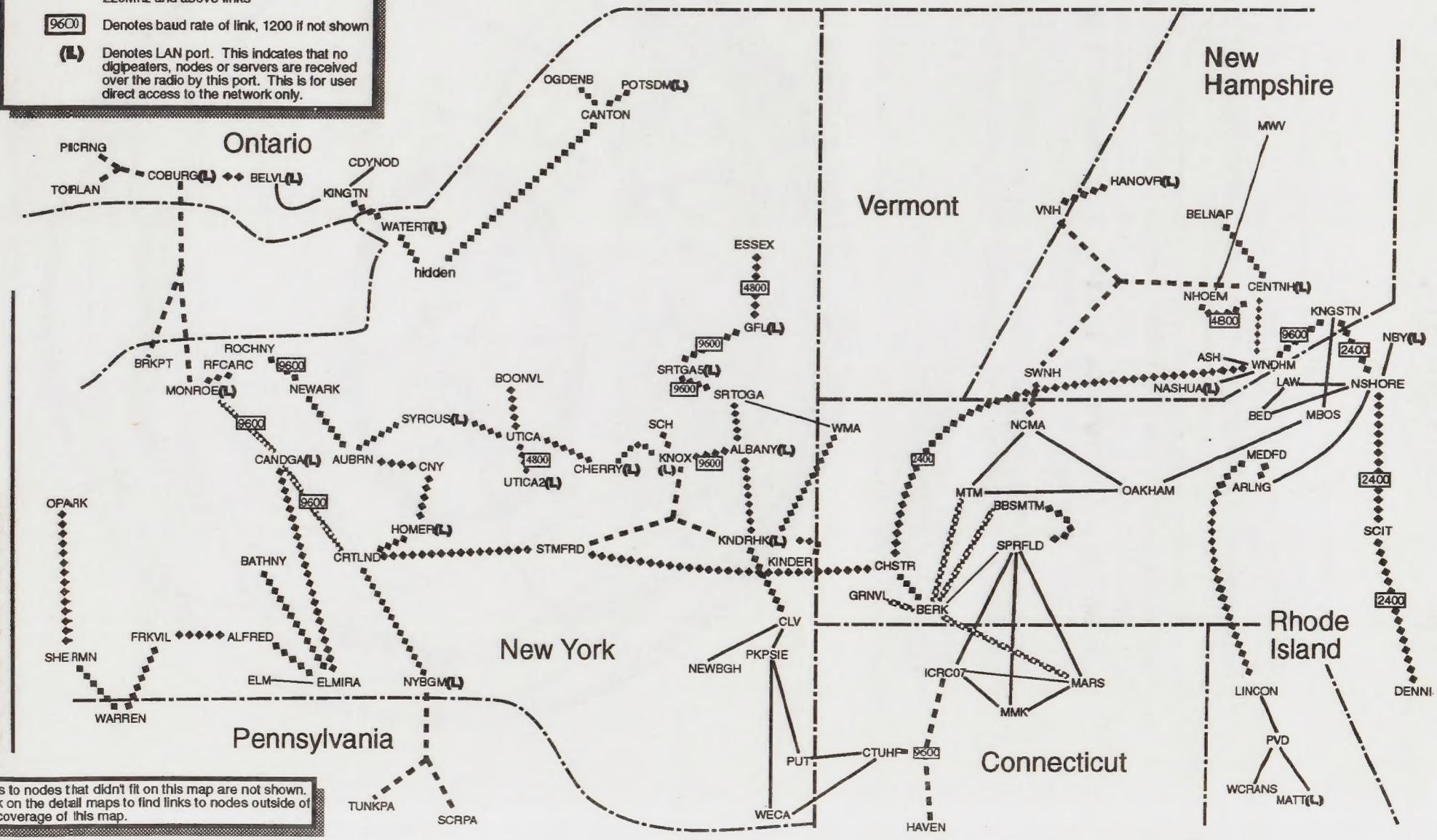
〰〰〰 Via Repeater

——— Non HTS Free or not sure 50MHz or 220Mhz and above links

9600 Denotes baud rate of link, 1200 if not shown

(L) Denotes LAN port. This indcates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.

Membership info for the North East Digital Association is available for a SASE to:
NEDA
Box 563
Manchester NH 03105



Links to nodes that didn't fit on this map are not shown. Look on the detail maps to find links to nodes outside of the coverage of this map.

The NEDA Quarterly is the official journal of the North East Digital Association. It is published four times annually. Distribution is around 500 copies including paid members and public relations purposes. Membership at the time of publication was 306.

NEDA is a non-profit club formed for the purpose of promoting free access general purpose amateur radio packet networking.

NEDA's mailing address is :
NEDA - Box 563, Manchester NH 03105